ADMINISTRATION REPORTS

OF THE

FOREST DEPARTMENT

IN THE

BOMBAY PRESIDENCY,

INCLUDING

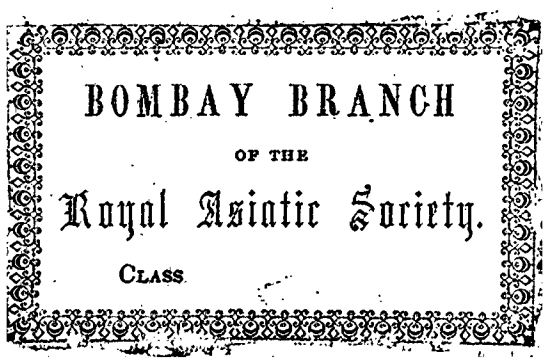
SIND,

FOR THE YEAR 1887-88.

Bombay:
PRINTED AT THE GOVERNMENT CENTRAL PRESS.

1889.

[Price—Rs. 1-4-0.]



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1889.

NORTHERN CIRCLE.

No. 4064 of 1888-89.

From

A. T. SHUTTLEWORTH, Esquire,

Conservator of Forests, Northern Circle;

To

J. NUGENT, Esquire,

Chief Secretary to Government,

Revenue Department,

Bombay.

Poona, 31st October 1888.

Sir,

I have the honor to submit herewith the Forest Administration Report of the Northern Circle for the year 1887-88, with its subsidiary statements.

I have the honor to be,

Sir,

Your most obedient Servant,

A. T. SHUTTLEWORTH,

Conservator of Forests, Northern Circle.

B 631—*a* NC

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FOREST ADMINISTRATION REPORT

OF THE

NORTHERN CIRCLE, BOMBAY PRESIDENCY,

FOR THE OFFICIAL YEAR 1887-88.

INTRODUCTION.

Forest demarcation and settlement operations have been continued during the year by officers specially appointed to undertake these works, in some cases with no other duties to perform, and in other cases in addition to their own revenue and magisterial duties of Assistant or Deputy Collector. The changes, which have been made in the forest areas, exhibit the following results :—

	Reserved Forest.		Protected Forest.		Total.	
	Sq.m.	a.	Sq.m.	a.	Sq.m.	a.
At commencement of the year	7,231	104	1,080	301	8,311	405
At close of the year	7,128	166	1,066	173	8,194	339
Decrease ...	102	578	14	128	117	66

2. The decrease shown above is mainly attributable to the rectification of the area of the leased Dángs which was formerly supposed to measure about 900 square miles, and was gazetted as "Reserved Forest" under Section 34 of the Forest Act in March 1879, but these Dángs have now been determined by the Topographical Survey of the Government of India to comprise 678 square miles and 320 acres only. In the Modása Petha of the Admedabad Collectorate 34 square miles and 118 acres of available forest lands have been constituted "Reserved Forests" during the year, but they have not been placed under the Forest Department for administrative purposes, and are kept under the management of the Collector of Ahmedabad, who is empowered to grant to the people any timber that they may require from these forests in amplification of the privilege conceded to the people of cutting and taking all timber, save of 17 kinds of trees, at their pleasure.

3. Settlement inquiries have been carried out in several districts, and have been completed almost everywhere, save in the Thána Collectorate and the leased Dangs, in respect of the old forest-lands which were gazetted under Section 34 of the Forest Act in 1879.

4. The "Code of Privileges," which was introduced last year for the North and South Tápti tálukás of the East and West Khándesh Divisions respectively, and which appears on pages 14 to 16 of the Forest Administration Report of that year, has been revised in a few details.

5. 997 miles of forest boundaries have been defined upon the ground in the several Forest Divisions of the Northern Circle by the erection of 12,222 special forest-boundary-marks at a cost of Rs. 5,865 during the year.

6. The Working-Plans Division was engaged chiefly in laying out compartments to form the "Coupes" of the season 1888-89, for timber operations in the several blocks of the two Thána Forest Divisions, and it also completed preliminary working plans of the Bábul Reserves in the Bhima Valley of the Poona Division.

7. The Topographical Survey of the Forest Reserves, undertaken by No. 17 "Gujarát party" of the Survey of India Department, has been working in the Thána and Násik Collectorates, and 150 square miles have been topographically surveyed on the scale of 8″=1 mile, no "*parcellement*" of the forest areas surveyed has been attempted concurrently with the survey work, but beyond making a plan of the ground exhibiting its physical features no further assistance has been given towards the preparation of working plans of these areas. The total cost of the survey has amounted to Rs. 39,683 for the year.

8. There has been no change in the composition of the 12 Forest Divisions comprising the Northern Circle.

9. The superior Forest Staff has remained throughout the year at the same numerical strength as before. Neither have any changes been made in the subordinate protective and office establishments during the year of this report.

10. Protection against felling and stealing timber has been good in all the Divisions of the Northern Circle; against fire it has been fair, save possibly in the Thána and West Khándesh Divisions and in the Surat Division; protection against breach of Section 25 (*h*) has been indifferent in some forests in the South Thána Division especially. Several Divisional Forest Officers have exercised with freedom and judgment their powers of compounding forest offences under Section 67 of the Forest Act, and 5,142 cases have been compounded during the year.

11. "Forest-fires"—which retard the reboisement of denuded lands, which check and distort, if they do not destroy, the growth of young trees, which cause unsoundness of timber and occasion deterioration in many other ways, although they may kill insect life,—were prevalent to a great extent in the Konkan and Gujarát Districts, while in the Deccan their occurrence was less frequent, but their range not so great, as heretofore, as the measures adopted to check them were more successful.

12. The rainfall during the year was good, and on the whole conducive to the growth of forest vegetation, as testified to by the successful progress made in artificial and natural reproduction despite many obstructions and drawbacks.

13. The forests were largely worked, both by departmental agency, and also under the system of selling timber standing for felling and removal by contractors and purchasers, according as local circumstances showed to be the more preferable of the two systems for adoption. The sale results were on the whole fair, for demand was brisk and prices were good except where special causes interfered with sales.

14. The financial results of the year are not unsatisfactory. The revenue exceeds by Rs. 55,525 the preceding year's revenue. The total receipts for 1887-88 amount to Rs. 9,68,625.

15. The names of superior Forest Officers, who have been conducting the administration of the forests during the year of this report, with the stations they occupied, are given below.

NORTHERN CIRCLE.

Mr. A. T. Shuttleworth, Conservator of Forests, 1st Grade, throughout the year.

No.	Forest Divisions.	Names of Officers.	Rank.	Designation.	From	To	Remarks.
1	2	3	4	5	6	7	8
		Mr. A. D. Wilkins ..	Deputy Conservator of Forests, 4th Grade.	Divisional Forest Officer.	1st April 1887 ..	31st March 1888.	
		,, N. B. Oke ..	Sub-Assistant Conservator of Forests, 1st Grade.	Assistant ..	Do. ..	24th April 1887.	
1	North Thána ..	,, J. H. Clabby ..	Acting do. 3rd Grade.	Do. ..	21st July 1887 ..	31st March 1888.	
		,, G. F. R. Blackwell.	Sub-Assistant Conservator of Forests, 3rd Grade.	Do. ..	1st April 1887 ..	25th Oct. 1887.	
		,, A. R. Maidment..	Do. do. ..	Do. ..	7th Nov. 1887 ..	31st March 1887.	
		Mr. S. Hornidge ..	Assistant Conservator of Forests, 1st Grade.	Divisional Forest Officer.	1st April 1887 ..	13th Dec. 1887.	
		,, G. P. Millet ..	Do. do. ..	Do. ..	14th Dec. 1887 ..	31st March 1888.	
2	South Thána ..	,, R. H. Madan ..	Acting do., 3rd Grade.	Assistant ..	1st April 1887 ..	Do.	
		,, W. G. Clabby ..	Do. do., 3rd Grade.	Do. ..	Do. ..	2nd Sept. 1887.	
		,, N. B. Oke ..	Sub-Assistant Conservator of Forests, 1st Grade.	Do. ..	25th Sept. 1887..	31st March 1888.	
		Mr. C. Greatheed ..	Deputy Conservator of Forests, 3rd Grade.	Divisional Forest Officer.	1st April 1887 ..	24th Oct. 1887.	
3	East Khándesh.	,, R. S. Fagan ..	Do. 4th Grade.	Do. ..	25th October 1887	19th Dec. 1887.	
		,, W. G. Clabby ..	Acting Assistant do., 3rd Grade.	Do. ..	20th Dec. 1887 ..	31st March 1888.	
		Mr. G. L. Gibson ..	Deputy Conservator of Forests, 2nd Grade.	Do. ..	1st April 1887 ..	13th July 1887.	
		,, C. Greatheed ..	Do. 3rd Grrde.	Do. ..	14th July 1887 ..	22nd July 1887.	
		,, R. S. Fagan ..	Do. 4th Grade.	Do. ..	23rd July 1887 ..	31st March 1888.	
4	West Khándesh.	,, L. D. Joshi ..	Sub-Assistant Conservator of Forests, 2nd Grade.	Assistant ..	1st April 1887 ..	14th July 1887.	
		,, G. K. Shahane ..	Do do. ..	Do. ..	15th July 1887 ..	25th Feb. 1888.	
		,, G. S. Hinge ..	Acting do., 3rd Grade.	Do ..	26th Feb. 1888 ..	31st March 1888.	
		Mr. W. G. Betham ..	Deputy Conservator of Forests, 2nd Grade.	Divisional Forest Officer.	1st April 1887 ..	Do.	
5	Násik	,, W. A. Wallinger.	Sub-Assistant Conservator of Forests, 3rd Grade.	Assistant ..	Do. ..	Do.	
6	Amednagar ..	Mr. H. Mainwaring ..	Deputy Conservator of Forests, 3rd Grade.	Divisional Forest Officer.	Do. ..	Do.	
		,, R. C. Wroughton.	Do. 2nd Grade.	Do. ..	Do. ..	29th Sept. 1887.	
		,, T. B. Fry ..	Do. 3rd Grade.	Do. ..	30th Sept. 1887..	29th Oct. 1887.	
		,, R. C. Wroughton.	Do. 2nd Grade.	Do. ..	30th Oct. 1887 ..	31st March 1888.	
7	Poona	,, W. R. Gaunde ..	Sub-Assistant Conservator of Forests, 3rd Grade.	Assistant ..	1st April 1887..	20th Nov. 1887.	
		,, G. S. Hinge ..	Acting do. do.	Do. ..	21st Nov. 1887 ..	20th Dec. 1887.	
		,, W. R. Gaunde ..	Sub-Assistant do. do.	Do. ..	21st Dec. 1887 ..	31st March 1888.	
		Mr. G. K. Betham ..	Deputy Conservator of Forests, 3rd Grade.	Divisional Forest Officer.	1st April 1887 ..	30th Oct. 1887.	
8	Sátára	,, C. Greatheed ..	Do. do. ..	Do. ..	3rd Nov. 1887 ..	31st March 1888.	
		,, L. D. Joshi ..	Sub-Assistant Conservator of Forests, 2nd Grade.	Assistant ..	28th July 1887 ..	Do.	
		Mr. G. P. Millet ..	Assistant Conservator of Forests, 1st Grade.	Divisional Forest Officer.	1st April 1887 ..	4th Sept. 1887.	
9	Sholápur ..	,, W. G. Clabby ..	Acting do. 3rd Grade	Do. ..	5th Sept. 1887..	14th Dec. 1887.	
		,, S. Hornidge ..	Assistant Conservator of Forests, 1st Grade.	Do. ..	15th Dec. 1887 ..	31st March 1888.	
10	Surat	Mr. F. Gleadon ..	Deputy Conservator of Forests, 4th Grade.	Do. ..	1st April 1887..	Do.	
11	Panch Mahális ..	,, H. W. Keys ..	Assistant Conservator of Forests, 1st Grade.	Do. ..	Do. ..	Do.	
12	Working-Plans ..	,, T. B. Fry ..	Deputy Conservator of Forests, 3rd Grade.	Do. ..	Do. ..	Do.	

16. *The historical event* of the year may probably be considered to be the submission of the report of the Forest Commission comprising four volumes, foolscap size, of printed matter, upon the completion of their labours. The appointment of the Commission with some of the points indicated for enquiry by them and the speech of His Excellency the Governor, Lord Reay, opening their proceedings are recorded in paragraphs 147 and 148 of the Forest Administration Report of 1885-86.

CHAPTER I.

AREA AND BOUNDARIES.

1.—AREA.

17. The selection of forest-land or waste-land which is the property of Government or over which Government has proprietary rights, or to the whole or any part of the forest produce of which the Government is entitled, in order that such lands may be constituted either "Reserved Forests" or "Protected Forests" in the nature of their own circumstances and of the conditions surrounding them, has been continued during the year in some of the Divisions of the Circle by special officers who are designated Demarcation and Settlement Officers,

and are appointed by Government for this duty. In several of the Divisions however the selection of forest areas had been completed already, and although in many parts of the country the physical protection afforded may be defective against erosion of soil and floods, and may not provide sufficiently for the storage of the rain water upon the higher levels, still it is not generally possible to expand the forest reservations at present, because additional lands of poor soil upon catchments and slopes as are desired for forest conservancy are either in the occupation of private parties for purposes of cultivation, or are assigned for other uses, and cannot be made available at once for forest conservancy. The year has been signalized by the introduction of forest conservancy for the first time into the Ahmedabad Collectorate in the formation of "Reserved Forests" in the Modása Petha where there is a considerable stretch of natural forest-land.

18. The changes which have been made during the year give the results shown below :—

Serial Number.	Divisions.	Area on 1st April 1887.				Added during the year.				Disforested or excluded by Rectification of Areas.				Area on 31st March 1888.			
		Reserved.		Protected.		Reserved.		Protected.		Reserved.		Protected.		Reserved.		Protected.	
		Square Miles.	Acres.	Square Miles.	Acres.	Square Miles.	Acres.	Square Miles.	Acres.	Square Miles.	Acres.	Square Miles.	Acres.	Square Miles.	Acres.	Square Miles.	Acres.
1	North Thána	284	536	298	369	..	..	..	..	..	..	..	..	284	536	298	369
2	South Thána	325	395	353	50	..	..	..	..	..	..	..	302	325	395	352	388
3	East Khándesh	668	76	104	307	59	520	..	..	3	124	36	146	724	472	68	161
4	West Khándesh	1,216	93	194	617	26	75	..	174	4	174	..	..	1,237	634	195	151
5	Nasik	1,110	549	..	..	2	131	..	..	5	365	..	..	1,107	315	..	..
6	Ahmednagar	836	253	11	114	10	297	..	..	24	10	..	..	822	540	11	114
7	Poona	722	21	..	..	5	482	..	..	..	..	..	..	727	503	..	..
8	Sátára	659	400	..	17	6	558	..	..	1	592	..	..	664	366	..	17
9	Sholápur	232	587	..	..	38	60	..	..	..	100	..	..	270	547	..	..
10	Surat	69	124	..	..	..	..	..	..	..	..	..	..	69	124	..	..
11	Dángs	900	..	..	..	..	..	..	..	221	320	..	..	678	320	..	..
12	Kaira	..	39	..	..	..	..	..	..	..	..	..	..	..	39	..	..
13	Panch Maháls	205	231	118	107	..	..	26	200	25	494	4	54	179	377	140	253
14	Ahmedabad	..	..	..	..	34	118	..	..	..	..	..	..	34	118	..	..
	Total ..	7,231	104	1,080	301	183	321	26	374	286	259	40	502	7,128	166	1,066	173

At the opening of the year the "Reserved Forests" measured 7,231 square miles and 104 acres, and the "Protected Forests" 1,080 square miles and 301 acres, duly constituted as such by notifications published in the *Government Gazette* under Sections 34, 19, and 28 of the Forest Act. Reductions of these figures made during the year amount to 286 square miles and 259 acres of "Reserved" and 40 square miles and 502 acres of "Protected Forests;" but all the reductions do not represent exclusions of forest lands from reservations; only a small proportion has been actually disforested. Mistakes which have been rectified in the calculations and in the book entries of forest areas account for the larger share of the deductions; when the leased Dángs were gazetted as "Reserved Forests" in 1879 the country was unsurveyed, and no correct map of it was in existence, by rough estimate the area was taken to be 900 square miles, but the topographical survey of the country which has fixed its boundaries has shown subsequently that the leased Dángs measure only 678 square miles and 320 acres; and a correction carrying a decrease of 221 square miles and 320 acres has been made in consequence.

19. Some of the "Reserved Forests" which were disforested by notification published under Section 26 of the Forest Act were at once formed into "Protected Forests." The absolute exclusions from reservation have come to 31 square miles and 291 acres. The additions made during the year have given 183 square miles 321 acres to "Reserved Forests," and to "Protected Forests" 26 square miles and 374 acres; leaving the total reservations under the Forest Act at the close of the year as "Reserved Forests" 7,128 square miles 166 acres, and "Protected Forests" 1,066 square miles and 173 acres. But the "Reserved Forests" of the Modása Petha of the Ahmedabad Collectorate have not been placed under the Forest Department, the management having been left entirely in the hands of the Collector of the District.

20. The proportion that the forests bear to the territorial area of the different Collectorates in the Circle, and the progress made in forest demarcation, which means the selection of areas for forest reservation, appear in the following table, which takes, it will be seen, no account of "Protected Forests," for the reason that they are not considered to be permanent reservations, but are lands the timber-growth upon which is placed under protection temporarily until the march of events may decide whether these forest-lands ought to be maintained always under forest conservation or should be given up to cultivation or other purpose :—

No.	Collectorate.	Territorial Area in Square Miles.	Reserved Forests duly constituted in Square Miles.	Percentage of Forest.	Number of Tálukás or Revenue Sub-Divisions.	Number of Tálukás in which Demarcation has been undertaken and sanctioned.	Number of Tálukás in which Demarcation remains to be completed.	Number of undemarcated Tálukás.
1	Thána	3,936	610	15·4	10	5	1	4
2	Khándesh	9,944	1,963	19·7	16	10	3	3
3	Násik	5,940	1,107	18·6	12	11	1	...
4	Ahmednagar ...	6,666	823	12·3	11	11	...	...
5	Poona	5,348	728	13·6	8	7	1	...
6	Sátára	4,988	664	13·3	11	8	3	...
7	Sholápur	4,521	271	5·9	7	7	...	...
8	Surat*	1,662	70	4·2	8	1	3	4
9	Panch Mahals ...	1,613	180	11·1	3	2	1	...
10	Ahmedabad ...	3,821	34	0·88	7	1	...	6
	Total ...	48,439	6,450	13·3	93	63	13	17

* The Dángs are not included.

21. In tálukás of which the demarcation has been completed and sanctioned, there still remain to be acquired extensive tracts of occupied lands contained within the finally determined forest boundaries of the future, in order to complete the final separation between forests and cultivation which the approved forest conservancy schemes provide, and in order to solidify forest blocks. These occupied lands are held for cultivation or other purposes, a few are alienated, but the greater proportion are in the hands of survey tenants, leased by them from Government on payment of a fixed assessment. Negotiations are being carried on for the obtainment of these lands by giving other available waste-lands in exchange for them, or by payment of compensation for the surrender of occupancy or proprietary rights as the case may be, and also of rights of ownership, if any, in respect of such timber as may be growing upon the lands. During the year of the report 3,335 acres were obtained on payment and Rs. 15,437 were expended in compensation.

22. Of waste and forest-lands selected for reservation, and of the lands which have been acquired by exchange or by purchase during the year, considerable tracts which have been provisionally notified as proposed "Reserved" or "Protected Forests" under Sections 4 and 28 of the Forest Act were still undergoing inquiries at the close of the year, and had not been constituted finally either "Reserved" or "Protected Forests." The distribution of these unsettled forest lands will be seen in the following table :—

No.	Collectorate.	Reserved Forests under Section 4.		Protected Forests under Section 28.		Total.	
		S. Miles.	Acres.	S. Miles.	Acres.	S. Miles.	Acres.
1	Thána	44	264	...	...	44	264
2	Khándesh	257	249	...	...	257	249
3	Násik	174	117	...	...	174	117
4	Ahmednagar	32	188	...	...	32	188
5	Poona	20	16	...	...	20	16
6	Sátára	28	584	...	...	28	584
7	Sholápur	6	176	...	...	6	176
8	Surat	...	...	...	...	...	...
9	Panch Maháls	19	509	26	200	46	69
	Total ...	583	183	26	200	609	383

23. In the Thána Collectorate Mr. W. S. Owen; Assistant Superintendent of the Revenue Survey Department, has been Forest Demarcation and Settlement Officer throughout the year; during the months of April and part of May 1887 he was engaged in the Karjat Táluka in the revision and demarcation of lands to be allotted out of forests to Thákurs, a jungle tribe, for purposes of cultivation, on the eastern aspect of the Mátherán range of hills, and upon the Western Ghats. Mr. Owen visited the whole of these Thákur lands which are situated high up the mountain side upon terraces, and superintended their demarcation by constructing boundary-marks. The location of cultivation which is carried on by means of "Ráb" burning on the side of the Mátherán range, and of the Western Ghats, upon the catchment of Bombay Harbour, which is subject to a rainfall averaging more than 100 inches per annum is very objectionable; but the Thákurs are on the spot, and have been there for many years past, and as they will not move elsewhere willingly, and cannot be coerced to migrate on to the plains, they must be provided for in the least harmful way in the places where they are now to be found. In the month of May the settlement of the "Reserved Forests" in 11 villages of the Mokháda Petha was completed, and after the rains and all through the cold weather up to the month of March, Mr. Owen was employed in assigning and marking off cultivation areas for Thákurs near the Bor Ghát, up which the G. I. P. Railway from Bombay to Poona climbs, and upon the southern side of the Mátherán hills, and likewise in selecting forest reservations in the Isáfat, Inám and Khoti villages of Pathraj, Kurung, Kotimbé, Wadap and Khandas, and in negotiating for the acquisition of the occupied lands contained within the sanctioned forest conservancy schemes of the Karjat, Khálápur, Bhiwndi and Bassein Ranges. In the month of March 1888 Mr. Owen commenced the demarcation and settlement of the forests of the Váda Táluka, but no great progress could be made before the close of the year, the Divisional Forest Officer of North Thána, Mr. Wilkins, had already made a preliminary selection for forest reservation of forest-lands and waste-lands in this táluka, which being the property of Government and being available for the purpose, were notified in the *Government Gazette* of the 5th May 1887 as proposed "Reserved Forests" under Section 4 of the Forest Act. The forest lists and the topographical survey maps on the 4-inches scale colored by Mr. Wilkins to illustrate his selections were furnished to the Forest Demarcation and Settlement Officer to facilitate his operations and to instruct him regarding the nature and extent of the forest conservancy scheme recommended by the Forest Department for the Váda Táluka.

24. There is a very considerable quantity of demarcation work still remaining to be undertaken in the Thána Collectorate. The old forest-lands in the Umbergaon Petha, in the Dáhánu, Máhím, Váda, Sháhápur and Murbád tálukás which were gazetted under Section 34 of the Forest Act in March 1879 remain to be settled, and the forest conservancy schemes of Umbergaon, Dáhánu, Máhím and the greater portion of Váda are yet untouched by the Special Demarcation Officer; while the proposals which have been made for the Sháhápur and Murbád tálukás will possibly require a thorough revision, for they contem-

plate the exclusion from "Reserved Forest" of many square miles of hill slopes draining upon rice lands, and into tidal creeks, and containing much valuable teak and other good timbers, the property of Government, and conversely they advocate the acquisition of much occupied lands on the flat better suited for cultivation than for forest purposes: and consequently these proposals have been condemned by every Forest officer who has considered and reported upon them. It does not seem to be probable, therefore, seeing the heavy work still to be undertaken, that with only one officer employed upon demarcations and settlements the Thána Collectorate will be finished off within the space of the next five years although the Forest Department has prepared forest conservancy schemes for all the abovementioned ranges, comprising lists of the survey numbers contained and topographical survey maps on the 4-inches scale colored to illustrate their proposals for forest reservation, which will be subjected to such revision as the Demarcation and Settlement Officer may deem to be necessary after he has inspected the lands and inquired into their circumstances.

25. The office of Forest Demarcation and Settlement Officer of Khándesh, at the commencement of the year, was under charge of Mr. E. C. Morrieson, C.S., Assistant Collector, who was at the same time in charge of the office of 1st Assistant Collector, and was some time employed also on special duty in connection with the demarcation of the British and Baroda State boundaries, consequently he was not able to attend to any out-door forest work personally; however his predecessor Mr. Lamb, C. S., had before leaving the district for Burmah commenced the demarcation by pillars of the Bhil settlements inside the boundaries of the Taloda Plain Reserved Forest selected by him, also the demarcation by pillars of the southern boundary of the Fatepur-Amoda Reserve in the Sháháda Range, and the boundaries of the forests of the Amalner Táluka. These various works were completed before the rainy season, and on the 6th July, Mr. Dodgson, C. S., joined the district as Special Forest Demarcation and Settlement Officer. During the year 85 square miles and 595 acres of forest-lands in the Bhusával, Jalgaon and Shirpur and Sháháda tálukás which had undergone forest settlement proceedings were finally notified as "Reserved Forest" under Section 19 of the Forest Act, and 70 square miles 85 acres of "Protected Forests" in the Shirpur, Bhusával and Jalgaon tálukás were converted into "Reserved Forests", while the Bhil settlements inside the Sháháda Táluka forests, the limits of which had been defined by boundary-marks upon the ground, were disforested. Mr. Dodgson inspected the forests of the Chálisgaon Táluka and also those on the southern part of the Dhulia Táluka during November and December 1887, with a view to the determination of the areas to be permanently maintained as "Reserved Forests" in this portion of the Collectorate; in January he visited the forest lands of the Páchora Táluka in order to make certain reductions upon Mr. Lamb's forest conservancy scheme for this táluka as directed by Government; after completing this work Mr. Dodgson proceeded to the Jámner Táluka and performed the settlement of its forests; then in the month of February he inspected and reported upon certain areas upon the banks of the Tápti and other rivers in the Bhusával Táluka which Mr. Lamb, C. S., had selected for a river-side timber, fuel and fodder reserves; and from thence he proceeded to the Erandol and Amalner tálukás and completed the settlements of their forests; and in the month of March, Mr. Dodgson inspected the Taloda Plain Reserved Forest where he finished determining and marking off on the ground the boundaries of the Bhil settlements inside of it, examining and defining the southern boundary of this reserve, and at the same time he made investigation of certain claims to lands put forward by the Chiefs of Ráisingpur and Nál. No occupied or other lands have been purchased for forest conservancy in the Khándesh District during the year. Much demarcation work still remains to be carried out in this Collectorate. The forest-lands and waste-lands of the Dhulia, Sindkheda, Pimpalner, Navápur, Nizámpur, Nandurbár and Akráni Ranges which are of very great expanse and much of it containing a dense and valuable timber-growth, some of it the best in the country, have yet to be examined, in order that tracts for permanent forest reservation may be selected and marked off; and looking to the size of the country remaining to be worked over it would seem to be probable that all the forest demarcations and settlements of the Khándesh Collectorate will not be completed under three or four seasons' hard work.

26. Mr. C. E., Frost, C. S., the Special Forest Settlement Officer of Násik, was in charge of the Collector's Office from the 1st April to the 21st June, and from August to the 9th November he was at Bijápur acting as Collector of that District. However during the year he has completed the settlement of the forests of the Násik and Peint tálukás, of the forests of the Baragaon Dángs, and he has submitted proposals for revision of the demarcation made by Mr. Silcock, C. S, in the Dindori and Igatpuri tálukás, the papers on the subject are before Government. In their Resolution No. 63 of the 5th January 1888 in the Revenue Department, Government passed orders upon the forest demarcation of the Peint Táluka which had been carried out by Mr. E. Grey, C. S., in co-operation with Mr. W. G. Betham, the Divisional Forest Officer, during three successive years, whereby a total forest area of 92,907 acres 25¼ gunthás, or 37 per cent. of the táluka, has been constituted "Reserved Forests." 651 acres of occupied lands inside the forest boundaries were purchased by payment of Rs. 534-10-0 compensation. The forest demarcation work in this Collectorate may be said to have been completed during the year, for though some minor details may still remain to be attended to, here and there, the main schemes for forest conservancy for the several tálukás have been drawn up and submitted to Government.

27. Mr. Woodburn, C. S., had charge of the Forest Demarcation and Settlement Office of the Ahmednagar Collectorate throughout the year, and the forests in all the 11 Ranges comprising this Division were finally demarcated by the close of the year. The proposals for Kopergaon, Sangamner, Akola and Nevása were sanctioned in Government Resolutions No. 5043 of the 9th November 1887, No. 5791 of the 31st August 1887, and No. 4475 of the 15th July 1887, respectively. The Sangamner and Nevása proposals were revisions of the original schemes. Rs. 4,631-5-8 were expended in payment of compensation for occupied lands acquired for forest conservancy.

28. There has been no special officer for forest demarcation and settlement in the Poona Collectorate during the year, but the work has been carried on by the Assistant Collector in addition to his revenue and magisterial duties, and consequently the progress has not been great, and much still remains to be done. The changes of the officers holding the appointment have also militated against much work being done. From April 1st to 31st July 1887 Mr. Symonds, C. S., was in charge of the office, but as he was then engaged in preparing an Accounts Manual for Government, he was able to perform only the current work of the Forest Settlement Officer. On the 1st August Mr. Bagnell, C. S., assumed charge and retained it till the 7th November, on which date the offices were handed over to Mr. H. F. Silcock, C. S., who retained them till the end of the year. During the rains of 1887 only miscellaneous work with the preparation of forest registers and alterations of village records could be done. Mr. Silcock found that no regular lists of the demarcations were kept up in his office, and he, therefore, caused the preparation of the lists of forest-lands and forest settlements to be made for the Indápur, Bhimthadi, Bárámati, Purandhar, and Sirúr tálukás, but they were necessarily incomplete, as no record of rights had been drawn up for any táluka. Mr. Silcock has enquired into and recorded rights affecting the forests of the Junnar, Mával and Mulshi Ranges, and of a part of Khed, and has settled the lands which had been provisionally notified under Section 4 of the Forest Act in these tálukás. Mr. Silcock has submitted a report upon the forest demarcation of the Junnar Táluka which suggests several modifications upon the originally sanctioned scheme. The demarcation and settlement report of the Haveli Táluka which was prepared by Mr. Steward, C. S., so far back as 1885 but which could not be submitted before, for the want of village statistics and grazing proposals as required by Government Resolution No. 7677 of the 22nd September 1885, has been completed and forwarded. The village of Donza and the Ghera lands of Singhar are not included in this demarcation scheme as the forests, mainly of teak, are very valuable and require special consideration. 732⅘ acres of occupied lands have been acquired during the year by payment of Rs. 3,147-8-0 as compensation, and 311 $\frac{3}{10}$ acres have been acquired by giving other lands in exchange for them, altogether 1,044 $\frac{1}{10}$ acres of occupied lands included within sanctioned forest conservancy schemes have been acquired for conversion into "Reserved Forests."

29. In the Sátára Collectorate Ráo Bahádur Rajaram Khanderao Vaidya was Forest Settlement and Demarcation Officer in addition to the revenue charge of the Karád, Válva, and Pátan tálukás from the opening of the year up to the 3rd February 1888, when Mr. G. W. Scott, Deputy Collector, relieved him of all the above duties. No demarcation work was attempted during the year, but the orders of Government were passed upon the forest demarcation schemes of the Khánápur, Khatáv and Tásgaon tálukás. But the forest settlement and demarcation reports of the Válva and Pátan tálukás which were completed by Mr. Muir-Mackenzie, C.S., two years ago, still remain under the consideration of Government. 208¾ acres of occupied lands were acquired for forest purposes by payment of Rs. 509-8-0 in compensation.

30. There has been no demarcation work to do in the Sholápur Collectorate during the year, as all the proposed schemes had been submitted before the end of last year. However orders on the demarcation and settlement of the Sángola Range were passed in Government Resolution No. 4547, dated 18th July 1887; similarly orders on the supplementary demarcation and settlements of the following ranges were passed in the resolutions noted against each :—

1. Sholápur—Government	Resolution	No. 3043 of 16th May 1887.
	Do.	No. 3678 of 15th June 1887.
2. Mádha	Do.	No. 4137 of 6th July 1887.
	Do.	No. 5572 of 23rd August 1887.
3. Karmála	Do.	No. 3037 of 16th May 1887.
	Do.	No. 3679 of 15th June 1887.
4. Pandharpur	Do.	No. 3873 of 27th do.
5. Málsiras	Do.	do. do.
6. Sángola	Do.	No. 7943 of 21st November 1887.

75⅖ acres of occupied lands were acquired by purchase for Rs. 691-7-6 to be constituted "Reserved Forests."

31. No demarcation work has been performed in the Surat Division, but Mr. Umedram Ranchoddas, Deputy Collector, has been engaged in examining the old forest reservations in the Mándvi Range with a view to such revision of boundaries as may be desirable. A forest conservancy scheme for this táluka has been prepared by the Forest Officer. In the same way a provisional scheme for the Dángs, showing the portions desirable of inclusion in forest reservation and *per contra* the parts to remain outside of forest conservancy for cultivation, has been prepared by Mr. Gleadow, the Forest Officer, and has been illustrated upon the topographical sheets upon the scale of 4 inches to 1 mile.

32. The demarcation of all the forests of the Panch Maháls had been completed before the commencement of the year, but in respect of the Hálol Mahál no notification under Section 4 or Section 28 has yet been issued, for the question as to whether the forests are to remain "Reserved" or to become "Protected" still remains to be decided: seeing that the forests are mainly located upon the slopes of that remarkably high and steep conical-shaped sacred hill, Powaghar, which rises abruptly from the plains to a height of about 2,811 feet above sea-level, and upon the sides of its buttress spurs, there can be little doubt but that they should continue as "Reserved Forests", for the cultivation of such lands permanently is beyond the region of practicability, and indeed the only possible way of raising any grain would be to cut down the trees, burn the wood *in situ* and to sow inferior grains in the ashes. The undermentioned Government notifications have affected the forest areas, "Reserved", "Protected" and proposed "Reserved", and the net result has thereby been to exclude 16,443 acres from "Reserved Forests", to add 14,227 acres to "Protected Forests," and to provisionally notifiy under Section 4 of the Forest Act 2,772 acres only :—

(1)	No. 2368	of the 20th April 1887.
	„ 2495	of the 25th do.
	„ 2695	of the 5th May 1887.
	„ 3192	of the 23rd do.
	„ 7552	of the 7th November.
	„ 1663	of the 12th March 1888.
	„ 1663 A.	of the 12th March 1888.
	„ 1663 B.	Do. do.
	„ 1663 C.	Do. do.
	„ 1994	of the 28th do.

88$\frac{3}{40}$ acres were purchased during the year for forests at an expenditure of Rs. 206-6-0, and at the close of the year the forest area stood as under:—

No.	Range.	Reserved.		Protected.	
		Square Miles.	Acres.	Square Miles.	Acres.
1	Godhra	105	178	25	443
2	Kálol	27	285	...	...
3	Hálol	46	554	...	...
4	Dohad...	...	...	72	458
5	Jhálod...	...	...	41	632
	Total ...	179	377	140	253

The sooner the conversion of the whole or such portion as should be permanently retained under forest conservation of the existing Protected Forests in the Dohad and Jhálod Ranges into "Reserved Forests" is effected the sooner will finality be given to the forest demarcation of the Panch Maháls and a complete separation secured between lands reserved for forestry and lands reserved for cultivation. The forests of the Jhálod and Dohad Ranges stand mainly, if not entirely, upon low hills, stony, and of poor soil, which cannot be brought under any profitable form of sustained cultivation, while the forests being confined to the higher levels act as natural reservoirs for the service of agriculture in the flat lands below them.

33. For the first time in the history of the country forest reservation, such as it is, has been constituted in the Ahmedabad Collectorate, and it has come undoubtedly many years after the necessity for establishing forest conservancy in this part of the Presidency, where forest lands and waste lands are available for the purpose, had been brought forward in a very prominent manner; a great flood of the rivers of the Ahmedabad Collectorate occurred in the year 1868 when a very large number of houses in the city of Ahmedabad were washed away, and much life was lost; some of the chief items of the widespread destruction consisted of 42,203 houses valued at Rs. 15,79,508, 6,396 cattle valued at Rs. 58,940, crops valued at Rs. 14,25,690, &c., &c.

This was followed by another flood in September 1875, when twelve lives were lost in the city of Ahmedabad. The Railway bridge and Ellis' bridge were wrecked and 3,887 houses in the city were ruined, and property valued at Rs. 1,64,590 was destroyed; 101 villages outside the city were visited by the floods, and the damage done to them was assessed at Rs. 13,84,050; and then enormous quantities of timber and bámbus were transported to Ahmedabad by Railway, at very considerale cost, from the forests of the Panch Maháls, of Mándvi, the Dángs and the northern portion of the Thána Collectorate for supply to the people for rebuilding their houses.

Under Government Resolution No. 9865, dated 8th December 1885, Government had sanctioned the notification under Section 4 of the Forest Act, of 22,074$\frac{11}{20}$ acres as proposed "Reserved Forest," and under Section 28, of 1,194$\frac{1}{2}$ acres as proposed "Protected Forests" in the Modása Petha, and Mr. Gibb, C. S., Assistant Collector, was appointed Forest Settlement and Demarcation Officer in respect of these lands, in order to make judicial investigations under the provisions of the Forest Act into any claims of rights attaching to them that might be put forward, and into the question as to whether the proposed boundaries should be modified in any way. As the result of Mr. Gibb's proposals Government in their Resolution No. 1551 of the 6th March 1888, sanctioned an area of 21,878$\frac{3}{8}$ acres to be constituted "Reserved Forests" in the Modása Petha by a notification to be published under Section 19 of the Forest Act. A number of privileges were at the same time conceded to the people of cutting and taking from the forests, such as thorns for hedging purposes, and "inferior woods" for agricultural and domestic uses, and for fuel, 17 kinds of trees being

classed as "superior" and reserved from cutting; and it was directed, that the management of the forests should remain with the Collector, who was given power to give any wood that was required by the people, and that the agency of village officers be utilised for the conservation of the forests who should be paid for the collection of forest receipts according to the scale sanctioned in Government Resolution No. 1511 of the 11th March 1887.

The Modása Petha is in the extreme north-east part of the Collectorate, and the forests occupy low spurs which ramify from the Dungarpur Range; small teak rafters with bámbus and other timber trees, such as are the ordinary associates of the teak tree, grow naturally upon this rocky forest land. Dr. Hove, the Polish traveller in Gujarát ninety years ago, was shown a sandalwood plantation near Dholka containing an area of 8½ square miles, and an extensive plantation near the city of Ahmedabad of what he states to be blackwood, but which probably was of another timber closely allied in appearance to it. Both of these forest estates have apparently disappeared. But seeing that there are two distinct river systems with tidal estuaries in the Ahmedabad Collectorate, which, as experience has taught, require protection to be brought under control, that there is a dearth of useful timber, that there is a population of over 200 to the square mile requiring timber and other forest produce for domestic consumption and in the promotion of industries, that out of a territorial area of 3,854 square miles there are extensive areas of arable and unarable wastes, and that the unutilised extensive salt wastes will, no doubt, grow valuable timber and beneficent trees, the forest demarcation now recorded can only be regarded as a first step in the right direction, and that forest conservancy must spread in the Province of Gujarát where it has a wide field for its much desired extension in the Collectorates of Ahmedabad, Kaira and Broach. The formation of a Gujarát Forest Division to include the three Collectorates named above, together with the Surat Collectorate deprived of the leased Dángs, is a measure to be recommended, especially in view of the formation of fuel and fodder reserves in a country unblessed by coal deposits.

34. The question of whether sufficient provision has been made for fuel and fodder reserves in the several forest demarcation schemes which have been sanctioned in the different districts of this Presidency has been under discussion during the year, and the Conservator has reported his opinion that a great deal remains to be done yet before it can be said that the forest reservations are sufficiently extensive, and are located suitably to meet any very considerable proportion of the demands that may in certain eventualities be made upon the forests of Western India for fuel. In a country where no coal deposits are to be found it would appear necessary to have an exceptionally large area permanently maintained under timber growth; and for the management of these forest estates to be as efficient as the science of forestry can secure. In Western India there are no coal deposits, and already cow-dung, which is of great estimation for manuring the soil, is largely used for fuel in parts of the country, a proceeding obviously inimical to the interests of agriculture. It is no doubt greatly in consideration of the fuel supply and of the absence of coal deposits that Germany and France have been forced to pay so much attention to the preservation and management of their forests. The carboniferous basins of Great Britain may be estimated to embrace some 5,400 square miles of coal, and this enormous provision of fuel is one of the reasons for the presence of such an insignificant area of State forests in that country; the French coal mines cover a little more than 1,000 square miles, the Belgian about 510, the Bohemian fields some 400, and that of Saxony only 30, while the Bombay Presidency has not a square foot. In the event of war with an European naval power, the supply of sea-borne coal might be cut off from Bombay and other Indian ports at any time, and in that case the greater portion of the stock at such ports would have to be retained there so that they may serve as coaling stations for English men-of-war, and consequently although indigenous coal may be available in other parts of the Indian Empire, and other substitutes may be also provided to a certain extent, still it is absolutely certain that a sudden and a very heavy rush would be made upon the forests for firewood, not only for domestic use, but for the service of industries. The demand for timber also for Railway sleepers and for building purposes, which is now largely met by iron and steel, would increase greatly

The Railways would require many hundreds of tons of firewood daily; the steam-mills and presses, which are so numerous near the Railway lines in this Presidency, in the city of Bombay, and at other trade centres, would have to depend entirely upon firewood in place of coal for continued existence, and many other industries would be starved to death if they failed to obtain firewood for their subsistence. Even now with an unlimited supply of sea-borne coal the demand for firewood for domestic use is exceedingly heavy, and has caused the depletion and entire denudation of many square miles of natural forest country. Mr. W. G. Pedder, C.S.I., the head of the Revenue Department in the India House, in his evidence given before the Select Committee of the House of Commons on forestry, stated :—

"Thus the great demand arising in large cities, such as Bombay and Calcutta on their being brought into easy communication with the forests by railways and harbours in which there is an immense demand for timber, especially for firewood. The result has been very extraordinary. Some 15 or 20 years ago, when the Government forests of the Konkan upon the west coast were first brought under conservancy, they were being rapidly destroyed, and it was necessary to stop the great drain of wood; the wood merchants thereupon finding that was the case found another source of supply in the small Native State of Janjira, the Habshi's country, which is an independent State. Janjira is a small state, about 40 miles long and from 15 to 20 miles wide, which, except the rice land, was entirely covered with forests at that time; when I went there about seven years afterwards as Political Agent, I found that three-fourths of the forests had been entirely destroyed and that the remainder of it was just possible to save. It was destroyed within my recollection within seven years, entirely by the demands of the city of Bombay, all the hills had been entirely covered with a thick primeval wood which had never been cut at all."

And in these circumstances it becomes the responsible duty of the Forest Department to urge very strongly the formation of plantations and the extension of forest reservations upon lands where agriculture can find no permanent home. The application of all forest reservations to the production of timber of the largest scantling is not the aim of the Indian Forest Officer in the Northern Circle of the Bombay Presidency; on the contrary it is his object to produce small timber such as the people prefer, to produce an abundance of fuel and fodder, and to increase and improve the growth of grass and the grazing for cattle. Forestry and agriculture have each their separate sphere, and one need not encroach upon the domains of the other, but deforestation and an absence of trees may become, as it has already become far and wide in Western India, a serious hindrance to material progress, and a source of absolute injury to agriculture, as is the case of the Ratnágiri Collectorate, for forests, by their power of storing the rainfall and of generating and distributing moisture, protect agriculture and provide its life-blood.

35. In the Administration Report of last year the Conservator of Forests remarked upon the defective protection of the catchment basin of Bombay harbour, and the consequent deposition of soil brought by a torrential rainfall and the scouring off-flow of water from the sides of steep hills within this catchment into the harbour of Bombay. This very important question of silt collecting in the natural wet dock of the Indian Empire has long attracted the attention of the officers of the Forest Department. In October 1882 a thoroughly representative Committee of Land Revenue and Forest officers assembled at Thána to consider the forest administration of that Collectorate in all its bearings This Committee was composed of—

1. Mr. W. B. Mulock, C. S., now acting Commissioner, N. D., } Collector of Thána,
2. Mr. E. J. Ebden, C. S., now Collector of Bijápur, } Forest Settlement Officer, Thána,
3. Mr. W. W. Loch, C. S, now Collector of Khándesh, } Assistant Collector, Thána.
4. Mr. A. T. Shuttleworth, Conservator of Forests, N. D.,
5. Mr. G. K. Betham, District Forest Officer, North Thána,
6. Mr. A. D. Wilkins, District Forest Officer, South Thána,

and in the matter of demarcation they reported as under :—

"The Committee are unanimously of opinion that throughout the Thána Collectorate all hill ranges and large forest blocks should be constituted 'Reserved Forests' and not be divided into 'Reserved' and 'Protected Forests' as at present. Their reasons for the above opinion are :—

"They are satisfied that the system is a mistake under which tracts of forests are set apart for the use of local inhabitants, while other tracts are closed against them. The effect of such a system is to cause an excessive drain on a necessarily limited source of supply, such as, for instance, during the late touring season came under the notice of the District Forest Officer, who found the people grubbing up even the roots of trees in protected forests for firewood. The people are thus driven to demand the expansion of their privileges, while owing to the physical features of the country and the naturally varied and unequal distribution of forest vegetation, of grazing grounds, and so on, it is practically impossible so to divide the forests as to give room for the exercise of all the privileges that are required, without the introduction of such complicated boundary lines as would render the conservation of the reserved tracts a matter of very great difficulty, while the fact of the two descriptions of forests existing in proximity to each other offers constant temptation to the people to ignore the limits assigned to them and thereby facilitates the commission of forest offences.

2. "The *Committee believes that the wants of the people can be better met* when the entire area of the more important forests is worked under one system and properly conserved and blocked."

The Bombay Forest Commission have, as stated before, issued their report during the year, in which a truly remarkable conclusion is enunciated in respect of forest demarcations in the Thána Collectorate in the following words :—

"Up to 1882 the guiding principle of all demarcations of forests in the Northern Konkan had been to effect a complete separation of the forest areas required to meet the local demand from these to be set apart as Imperial reserves under the strictest possible conservancy, *under the new departure taken in 1882 local supply ceased to be a factor in the demarcation of forests.*"

The general tenor of the evidence recorded by them, and the report of the Forest Commission go to show that the forest areas, which had been formerly assigned, either temporarily for the use of villagers, or as occupancy holdings and under the survey settlement to individual cultivators, to supply local wants, had been overworked, and had become very greatly, if not altogether, exhausted or denuded of such trees as were at the disposal of the people for the supply of local wants, and were consequently unserviceable for the purpose of their original assignment: such being the case, and also seeing that the object with which the Forest Conference of 1882 had proposed forest protection to be extended to all hill lands in the district was, as stated by them, *that the wants of the people can be better met when the entire forest area of the important forests is worked under one system and properly conserved and blocked* the only inferences reasonably possible from the remark made by the Forest Commission quoted above are that the Commission have not read the Conference report carefully, or that they have taken a very narrow view of the question, quite overlooking the consideration that the system of forest demarcation which serves to the highest degree the general and potential interests of the country at large which is affected by it, pays greater regard to local supply than a scheme which may confer temporary and evanescent advantages upon a small section of the population, or upon a few out of many conflicting interests; a sustained yield of the produce required is the main desideratum in the consideration of the local supply, and the Commission emphasize this view by the pertinent remark—"so long as the people could satisfy all their legitimate wants from these communal lands they had no reasonable grounds of complaint!"

The system of forest demarcation adopted in the Thána Collectorate has a very important bearing upon the protection of Bombay Harbour against the deposition of silt brought from its catchment area, because the forest-lands and the waste lands belonging to Government which were assigned, either as occupancy holdings under the survey settlement, or as places of general resort to entire villages, *for the supply of local wants*, are located upon the sides of steep hills, and when once the trees have been cleared away which protect the ground against the direct attacks of a torrential and concentrated rainfall, and which bind the soil to the slopes, then by the beating force of the heavy volumes of falling rain, it being borne in mind that 100 inches upon one acre within a brief space of eight weeks signifies a deluge of more than 9,000 tons weight of water dashed down upon every 4,840 square yards of surface, and by the rush of the downward flow of this mighty body of water the soil is displaced and carried off into the basin where the water naturally discharges itself. The sums of money that have been expended upon dredging operations for the

removal of silt by the Trustees of the Port of Bombay during successive years has been reported by their Chief Engineer in the following figures :—

Year.	Cost.			Tons lifted.	Cubic feet approximate.
	Rs.	a.	p.		
1883-84	1,46,611	13	0	9,08,153	1,81,63,060
1884-85	1,19,935	10	1	9,80,800	1,96,16,000
1885-86	1,01,299	0	0	9,47,475	1,89,49,500
1886-87	1,19,244	4	3	9,27,950	1,85,59,000
1887-88	1,50,867	1	3	13,49,880	2,69,97,600
1888-89	2,69,300	0	0	The sanctioned Budget grant is Rs. 2,69,300	
Total ...	9,07,257	12	7	.....	.....

The above figures only show a small fractional portion of the soil brought into, the silt deposited in, Bombay Harbour; but these figures taken alone represent that during a period of five years a superficial area of at least 11 square miles upon the catchment was deprived by the action of water of its surface soil to the depth of one inch; what proportion the area covered by the dredging operations bears to the whole water space of the harbour has not been stated, and it is not possible to say how many cubic feet of soil are removed annually from the Thána and Kolába Collectorates for eventual deposition in the harbour of Bombay; but it goes without saying that this unknown quantity is *enormous*, and that there is a very potential agency at work, quietly, steadily and very energetically, depositing soil in Bombay Harbour, which may in time destroy this great commercial port of the Indian Empire as effectively as is the accomplished destruction of the Gulf of Cambay with the ancient Port of Surat, and the magnificent channels of inland navigation, the tidal creeks of the Ratnágiri Collectorate.

It may now possibly be acknowledged that the apprehensions of the Forest Officers regarding the deposition of silt in Bombay Harbour are not fanciful. And the fact that the forest reservations do not include, at present, nearly as much of the hill slopes as they should, is testified to also by Mr. Mulock, C. S., the Collector of Thána, before the Forest Commission in the following words :—

"Firstly that all the best teak grow on the level ground and on the lower ranges of hills up to a height of about 500 feet, above 500 feet the teak is scarce, of poor growth, and does not pay even for its cutting. It is principally out of these lower ranges containing the most valuable timber that the allotments of warkas have been made by the Survey, and if the teak on them is sold to the occupants, Government will have little left worth preserving or maintaining an expensive Forest Establishment for, and more warkas land will be denuded of vegetation."

If the recommendation made by the Forest Commission that Government should sell to the survey occupants, at half price, all the reserved trees, teak, blackwood and sandal, which are at present the property of Government, standing upon the occupied lands in the Thána Collectorate, be regarded in the light of the early complete denudation of the hill lands upon which the trees are now standing, and which they are protecting, seeing that the half price will be a very strong inducement to the rayats to obtain profit by the sale of the trees to the Bombay wood-merchant, despite conditions and imaginary safeguards, then, in at least so far as the catchment of Bombay Harbour is concerned, the project cannot but be unreservedly condemned. But the Government of India has already remarked that "the action of monsoon rains on unprotected hill sides is unquestionable and the very possibility of silt collecting in Bombay Harbour when such a contingency can be avoided, may, it is suggested, alter the balance of conflicting interests and render the purchase of exposed hill sides desirable." The Trustees of the Port have expended a sum of Rs. 6,37,956 during a period of five years in dredging silt, an expenditure of this

amount in the purchase of hill-sides in the catchment of Bombay Harbour; judging by the rates at which the occupancy rights of warkas lands are being purchased upon the catchment of the Tánsa Lake in the Thána District, would secure an area of at least 200 square miles, which probably is as much if not more than is required to be afforested.

36. No demarcation of forests has been undertaken in Native States by Forest Officers of the Northern Circle during the year. It was mentioned in last year's Forest Administration Report that Mr. Balaji Gangadhar Sathé had been deputed by Government to report to Government what scheme of forest demarcation and settlement can be carried out, and at what cost, to protect the catchment area of the Fife Lake. Mr. Sathé was relieved of this duty at his own request, and Mr. Sitaram Damodhar, another Deputy Collector, was sent to do the work at the end of September 1887, but no report had been submitted by this officer before the 31st March 1888. The Executive Engineer for Irrigation however has reported that experiments were made to gauge the deposition of silt in the Fife Lake by lowering down, at the commencement of the rains, flat boxes measuring $2' \times 2' \times 1\frac{1}{2}'$, which were submerged so as to lie on the bed of the lake, and were taken up after the rains, with the result that at the head of the lake the deposit in the boxes averaged about 8 inches. These experiments, however imperfect they may be, show that a considerable removal of soil from the catchment slopes is going on, and that it is finding a resting place in the bottom of the Lake which supplies the city of Poona, the Cantonments and Civil Station of Kirkee and Poona with drinking water and water for domestic use, and at the same time irrigates the champaign country of the north valley of the Bhima river over a distance of about 55 miles. The construction of the lake and its distributary canals has, it is understood, cost upwards of one million sterling.

2.—FOREST BOUNDARIES.

37. In paragraph 31 of the Forest Administration Report of last year the specification of special forest boundary-marks and the directions issued in the Circle for the demarcation of forest boundaries upon the ground are given. The work of demarcation has been carried on with vigour in several directions during the year and the following table will show the progress made and the cost incurred :—

No.	Division.	Length of Boundaries.	Number of Cairns erected.			Cost.		
			Large.	Small.	Total.			
		Miles.				Rs.	a.	p.
1	North Thána	13¼	134	266	400	252	5	0
2	South Thána	186	556	3,080	3,636	1,790	3	5
3	East Khándesh	43	236	548	784	450	3	3
4	West Khándesh	.....	179	573	752	600	6	9
5	Násik	95	34	442	476	188	12	0
6	Ahmednagar	217	634	1,236	1,870	900	8	0
7	Poona	156	361	2,479	2,840	811	8	6
8	Sátára	About ½ mile.	...	8	8	1	14	0
9	Sholápur	202	139	260	399	234	4	6
10	Surat	.....	72	...	72	364	11	0
11	Panch Mahals	84	96	889	985	270	4	0
	Total ...	996¾	2,441	9,781	12,222	5,865	0	5

3.—FOREST SETTLEMENT.

38. In the Thána Collectorate forest settlement inquiries have been completed in tálukás Bassein, Bhiwndi, Kalyán, Karjat, Sálsette and the Mokháda Petha in respect of all the forest areas, those gazetted under Section 34

of the Forest Act in March 1879, as well as those which have been provisionally notified under Section 4 of the Forest Act subsequent to that date. Enquiries were in progress during the year in the Váda Táluka; but no settlement investigations have, up to date, been commenced in the Dáhánu, Máhím, Murbád and Sháhápur tálukás of the forest-lands which were gazetted in 1879.

Mr. Owen, the Forest Settlement Officer, awarded a right of free grazing under the provisions of Section 38 of the Land Revenue Code affecting the whole or portions of the reserved forests of one forest village of the Bhiwndi Táluka of the South Thána Division and of nine forest villages of the Bassein Táluka of the North Thána Division during the year, and an appeal was made against this decision to the Collector of Thána with the result that Mr. A. Keyser, C. S., upheld the award of the Forest Settlement Officer, and a reference was then made to Government by the Conservator of Forests under Section 20 of the Forest Act.

The appeal made by the Forest Department against the Forest Settlement Officer's decisions in connection with the "Reserved Forest" in the Khoti Village of Ghátkoper in the Sálsette Range was heard and decided by the Collector of Thána during the year when Mr. A. Keyser, C. S., confirmed the order of the Forest Settlement Officer in so far as it awarded to the Khote—

(1) A right to take such wood as he needs for purely domestic purposes after proving to the satisfaction of the Collector that he has need for it.

(2) The right to gather fruit of the trees in the forest.

(3) The right to the usufruct of brab trees in the reserved forests.

And on the other hand he cancelled the order of the Forest Settlement Officer in so far as it awarded to the Khote—

(1) The right to take grass for private use from the reserved forests.

(2) The right of grazing his cattle in the reseved forests.

(3) The right to take branches of trees in the reserved forests for purposes of ráb.

The Collector in his judgment ruled that "the Forest Settlement Officer had misinterpreted the lease when assuming it gave any proprietary rights over the hill land and that he acted *ultra vires* in allowing any right to cut grass or rab or to graze cattle when no such rights are specified in the lease."

The Conservator of Forests appealed to Government under Section 21 of the Forest Act against the decision of the Collector of Thána, pointing out that the rights that had been awarded had not been sufficiently defined as required by Sections 13 and 14 of the Forest Act. A right to take wood must be subjected to the capability of the forest with due regard to a sustained yield, *i.e.*, the quantity taken can only be drawn from the interest and not from the capital stock of the forest, and the Forest Act imposes upon the Forest Settlement Officer the obligation of specifying the quantity, &c., to be taken.

39. In the Khándesh Collectorate the Forest Settlement Officer held inquiries during the year regarding the forest-lands which had been provisionally notified in the Jámner, Erandol and Amalner tálukás, and found no private rights to exist, save rights of way and of access to water.

40. In the Násik Collectorate the Forest Settlement Officer completed his judicial investigations concerning the forests of the Násik, Peint and Igatpuri tálukás, and the settlement of the forests of the Násik Collectorate has thus been practically finished with no unsatisfactory result, for the only rights found to exist and awarded in the 1,107 square miles of reserved forests are right of way and of access to water and a right of grazing in respect of one or two survey numbers of small acreage.

41. In the Ahmednagar Collectorate the forest settlement has been completed in all the 11 tálukás, save in connection with some few survey numbers which were formerly occupied and have been recently acquired for forest.

42. In the Poona Collectorate the enquiries into private rights and the settling of the forests has been completed, much of the work having been accomplished during the year in the Sirúr Indápur, Mával, Junnar, Mulshi, Bhimthadi and Bárámati Ranges, but the record of rights has yet to be drawn up. Of the old forest-lands which were gazetted in March 1879 under Section 34 of the Forest Act the undermentioned areas still remain unsettled :—

	A.	g.
(1) Purandhar Range	17,358	10
(2) Khed do.	44,766	17½
(3) A'mbegaon Petha	38,178	2

The Forest Settlement Officer having recorded an order in respect of certain "Reserved Forests" in the Bhimthadi and Indápur Ranges in the following words—"the only right found to exist was the privilege of free grazing which should be continued subject to the provisions of the Land Revenue Code," the Conservator of Forests appealed to the Collector, with the result that the Collector amended the order of the Forest Settlement Officer in the following decision : "I find therefore there is a right of grazing in these numbers common to all the villagers of the villages in which they are situated and limited by any orders the Commissioner may hereafter pass under Section 38, Land Revenue Code, and I amend the Forest Settlement Officer's decision accordingly." The Conservator thereupon referred the case to Government for revision under Section 21 of the Forest Act.

In the Haveli Táluka the enquiry and settlement of private rights are in progress during 1887-88, 42,402 acres and 36¾ gunthás of "Reserved Forest" lands have been subjected to enquiries and settlement.

43. In the Collectorate of Sátára settlement enquiries concerning claims over lands notified under Section 4 of the Forest Act consequent to the sanctions given by Government to the different forest demarcation proposals involving the afforestation of some waste-lands and forest-lands have progressed to completion during the year in the forest ranges of Jávli, Mahábaleshvar, Wái and Tásgaon. The claims in most cases were of right of way ; lands provisionally notified as reserved forests in the Khánápur and in Khatáv tálukás still await settlement enquiries, which will be undertaken next season ; with the exception of the little and purely formal work remaining in these two tálukás, the settlement work is finished in the Sátára Collectorate.

44. The settlement of some additional lands which had been acquired and were notified under Section 4 of the Forest Act, was effected during the year in the Sholápur District, leaving nothing further to be done.

45. In the Surat Collectorate the settlement enquiries into private rights over the old forest-lands in the Mándvi Táluka, aggregating 52 square miles, which had been gazetted in March 1879 under Section 34 of the Forest Act, were undertaken by Mr. Umedram Ranchordas, the District Deputy Collector, who acted as Forest Settlement Officer in addition to his Revenue and Magisterial duties in his revenue sub-division : no awards adverse to Government and no report in the results of the settlement enquiries had been communicated before the close of the year.

46. In the Panch Mahál the settlement of the Dohad and Jhálod forests was completed during the year. The greater part of the settlement of Godhra forests was also finished. As the question as to whether the Hálol Mahál forests shall continue as "Reserved Forests" or shall be derogated into "Protected Forests" had not been decided, no settlement work has necessarily been attempted in this range.

47. The progress made during the year in forest settlements of the old forest areas which had been gazetted under Section 34 of the Forest Act in March 1879 appears as under :—

Class of Forest.		At the commencement of the year. Areas under Section 34 in which private rights have not been enquired into, settled and recorded.	Areas settled during the year under Chapter II of the Act.	Areas settled during the year under Chapter IV of the Act.	Area of Reserved Forests alienated under Section 26.	Area of Protected Forests disforested under Government orders.	At the end of the year. Areas under Section 34 in which private rights have not been enquired into, settled and recorded.	Remarks.
		Sq. Miles.	Sq. Miles.	Sq. Miles.	Sq. Miles.	Sq. Miles.	Sq. Miles.	
North Thána ..	Reserved ..	201	..	..	....	...	201	The settlement work accomplished during the year is not exhibited by these figures, but only the progress made in the settlement of the forest-lands which were gazetted under Section 34 of of the Forest Act in March 1879.
	Protected ..	291	..	..	....	1	290	
South Thána ..	Reserved ..	99	..	..	....	....	99	
	Protected ..	329	..	..	....	....	329	
East Khándesh .	Reserved ..	....	..	..	....	....	.. ..	
	Protected ..	....	..	..	....	....	. ..	
West Khándesh.	Reserved ..	....	..	..	....	....	....	
	Protected ..	....	..	..	....	....	....	
Násik	Reserved ..	....	..	..	....	....	....	
	Protected ..	....	..	..	....	....	....	
Ahmednagar ..	Reserved ..	421	416	..	5	....	....	
	Protected ..	....	..	..	....	....	....	
Poona	Reserved ..	258	66	..	....	....	192	
	Protected ..	....	..	..	....	....	....	
Sátára	Reserved ..	....	..	..	....	....	....	
	Protected ..	....	..	..	....	....	....	
Sholápur ..	Reserved ..	....	..	..	....	....	....	
	Protected ..	....	..	..	....	....	....	
Surat	Reserved ..	733	..	..	....	....	733	
	Protected ..	....	..	..	....	....	....	
Panch Maháls ..	Reserved ..	178	..	..	26	....	152	
	Protected ..	....	..	..	....	....	....	
	Total ..	2,510	482	..	31	1	1,996	

48. Enquiries into claims of forest rights made by the holders of inám or alienated villages have likewise been undertaken by the several Forest Settlement Officers.

In the Khándesh Collectorate Mr. Dodgson, after enquiry, reported upon the question of forest rights of 21 inám villages, and the orders of Government upon the same passed upon the opinion of the Legal Remembrancer on the Forest Settlement Officer's reports, have been received. Fourteen inám villages still remain to be dealt with in the Khándesh Collectorate.

In the Poona Collectorate all the inám villages have been reported on in the Bhimthadi and Indápur tálukás and Bárámati and Mulshi pethás. In the Purandhar, Mával, Junnar, Sirúr and Khed tálukás the enquiries regarding inám villages have been completed, but the final orders of Government regarding them are still awaited. All the reports upon the question of rights concerning the several alienated villages of the Sátára Collectorate have been disposed of by Government with the exception of 5 or 6, orders upon which were still pending at the close of the year.

49. In a few years hence there will be a complete record, the fruits of the elaborate and searching enquiries instituted by the Forest Settlement Officers of Government rights on one hand and of the rights and privileges of the people on the other hand in respect of all forests and timber-growth in the Northern Circle.

4.—PRIVILEGES CONCEDED TO VILLAGERS.

50. In the Thána, Násik, Ahmendnagar, Poona, Sholápur and Surat Divisions no changes have been made during the year in the nature and extent of the privileges previously conceded in reserved and protected forests.

51. The privileges exercised by the people in the two Thána Divisions are stated in detail in paragraph 46 of the Forest Administration Report of 1885-86, and in addition to those mentioned therein villagers and local residents were subsequently allowed to take on permits at reduced prices timber and other forest produce, including bámbus; and upon the recommendation of the Collector Mr. G. Vidal, C.S., Government directed that in those portions of the

Thána District where the forest settlement remains to be effected, Nána, *Lagerstræmia*, Dhávda, *Anogeissus*, Ain, *Terminalia*, and Bonda, *Lagerstræmia*, trees in the Government forests may be lopped for ráb subject to the condition that the leading shoot of a tree may not be touched, that no branch thicker than the wrist may be cut, and that no young seedling or sapling or shoot from old roots less than 9 feet in height are to be touched.

These prescriptions may appear sound on paper, but they are very difficult to enforce in the forests. The four kinds of trees are four of the best junglewood timbers in the Thána forests: the bark of the Ain is used extensively by the Koli fishermen of the coast for coloring their fishing nets both to make them withstand the action of sea-water and to render them less visible in the water, and the Dhavda, *Conocarpus*, is such a tough elastic wood that it is used for axles of carts. Ráb-cutting in the forests as practised by the villagers consists of leaving the stem of the tree standing bare and mutilated in the forest, all the side branches and the crown of the trees having been cut away, and such portions of the wood taken for domestic use as may be required for fuel in the houses, and the leaves and branchlets taken for ráb, and then the balance of the wood resulting from the lopping is sold to traders, &c., for export; all undergrowth, including natural reproduction of timber trees, is slashed away under the pretence that shrubs and brushwood are being cut; and consequently "ráb" cutting is an unmitigated evil to the forest, for it brings death, certain, though it may be protracted, to all the kinds of trees that are cut constantly for ráb. Any attempt to make the people conform to regulations brings the forest subordinates in contact with the people, and there is an outcry at once, while the forest guards receive little or no support from the Subordinate Magistrates in repressing the people who destroy trees and young growth in cutting ráb, for at the most a detected offender is fined, but generally a warning is administered, as the market value of the material produced in Court, a few sticks and leaves, is inconsiderable.

52. The Forest Commission, whose report has appeared during the year, has made some very extravagant recommendations, which have been published in the public newspapers, regarding "privileges in favour of residents and cultivators of forest villages, including the wild tribes, which *are intended to meet the wants and convenience of the well-to-do classes, as well as those who are chiefly dependent on the forests for their living.*" They provide that—

Grazing is to be free to all in the forests. The number of cattle in the district being 4,71,633.

Firewood.—The people may remove by head-loads for barter, sale or consumption all branchwood or small wood of two inches and less in diameter from special annual cuttings for local supply; and the better class of firewood from the same 'coupes' by carts on payment of a fee of eight annas per cart.

This recommendation is not workable; it provides for so great interference with the people by forest guards, and for wood dealing by the Department in competition against local trade that it can never be worked satisfactorily.

Timber.—The people may purchase for building or for agricultural purposes from the same coupes either at fixed rates or at periodical auctions.

Bámbus.—The people may take for the personal requirements from the unclosed portions of the forests without payment, and without any description of pass, provided the bámbus are not transported beyond the limits of the forest block or the village in which they reside or hold lands.

This is a most unpractical recommendation; it provides for the exemption of bámbus from the provisions of Chapter VII of the Forest Act "of the control of timber and other forest produce in transit"; it provides for the sacrifice of forest revenue from bámbus, and the only safeguard it leaves against

the eradication of bámbus from the Thána forests is to be found in the interpretation of "the closed portions" of the forests in contradistinction to "the unclosed portions" of the forests.

Minor Produce.—The people may collect 'free of charge' for use, barter, or sale, all unreserved and unfarmed minor forest produce, such as fruits, leaves, bark, herbs and roots for medicinal or religious purposes, and also for their own use, such articles of minor forest produce as may have been farmed but not strictly reserved.

The people and the farmers of such articles of minor forest produce as may be farmed will be in constant conflict, for it will be a bugbear on the consciences of the poor people to place such temptation in their way by allowing them to take for home consumption, but not for sale, marketable articles of minor forest produce, and the contractor will not consent to entrust his profits to the consciences of the people. Further the removal of bark from trees is a most injurious treatment.

Karvi, Thorns, Earth, Stones.—May be taken free for domestic use.

Ráb.—The people may, for the next ten years, lop the branches of Ain, Kumbhar, Umbar, Dhavda, Koshimb, Nána, Bonda and Kalam trees in the unclosed partions of forests, but they are not to cut branches of more than one inch in diameter, and the leading shoots of trees are to be kept intact; and in addition to the above, the concessions already made of free removal of grass, leaves, reeds, shrubs, and brushwood from the open reserved forests should at the same time be confirmed, and the further privilege of removing grass from closed reserves be granted.

This is an eminently unsatisfactory recommendation, for

(*a*) it puts off the facing of the ráb question till after another decade, and in the meanwhile the fuel and fodder-supply is to be vigorously attacked on all sides, and probably to be depleted.

(*b*) it provides all the elements of friction and conflict;

The old practice of ráb is, as has been said, to cut every thing high and low, and leave a disfigured stem to testify to the damage done, and the villagers thus help themselves to firewood for domestic use, and for barter and for sale, and they take leaves and branchlets for ráb. The evidence given before the Forest Commission has shown how difficult it is to enforce any regulation in lopping trees, and that to attempt to do so must bring the Forest Officers and the people into conflict. The Forest Commission have apprehended that a conflict must be the certain result of attempting to protect the leading shoots and the branches over one inch in diameser, for they urge that "*sympathy with the local wants and tolerance of local prejudices must be shown, as well as firmness and perseverance in enforcing necessary regulations.*"

Apparently the Commission in recommending the use of branches of trees for ráb have been influenced by the report of the Director of Agriculture, who was a member of that body, upon rice cultivation in Thána, which is one of the appendices of their report, in paragraph 44 whereof it is written: "But I know that 2 tons of leaves with 2 tons of grass are required to produce seedlings for an acre of rice, *and I further know that it is a very small proportion of leaves which fall in a tract of evergreen forests like those of Thána.*" These remarks would imply that the natural supply of leaves in the Thána forests is very insignificant, because the trees are "evergreens," and that "evergreen trees" only shed a small proportion of their leaves. No greater misapprehension could occur: "evergreen forests" in the Thána Collectorate are to be seen on the tops and upper slopes of high mountains only, such as Mátherán and the Western Ghats, and of the 1,261 square miles of forests in the Thána Collectorate possibly the odd 61 square miles would more than cover the whole of "the evergreen forests," while 1,200 square miles comprise deciduous forests containing trees which shed all their leaves annually, each kind at one period of time.

Though "the evergreen forests" may retain their verdure through all the seasons, still the trees in them shed their leaves yearly; and the proportion of leaves which fall in a tract of "evergreen forests" is enormous, as a visit to the Lonávla woods, to the Kárli forest, to the Mahábaleshvar and other forests of similar composition will show. The leaves naturally shed in the Thána forests yearly provide, it may safely be said, a far greater quantity of leaf manure in actual weight than all the rice cultivation in the district can consume, and Mr. Mulock, C. S., Acting Commissioner, N. D., who was for four years Collector of Thána, and Assistant Collector there for many years, and is the best living authority upon that district, has stated in his evidence that the people collect the fallen leaves in the forests and carry them three and four miles to use for "ráb." The composition of leaves varies, but it may be generally taken that 1,000 lbs. of leaves contain about 6 to 10 lbs. nitrogen, 1 to 3 lbs. potash, 1 to 4 lbs. phosphoric acid, and it would not be an exaggerated estimate to say that the trees in the forest reservations in the Thána Collectorate naturally shed upwards of 3,00,000 tons weight of vegetable manure annually.

53. All the forests of the Thána Collectorate have been divided into blocks and the latter are sub-divided into 40 working compartments each, and one compartment of each block becomes a "coupe" every year, in which all the trees, save selected standards to be reserved until the next revolution, are sold on foot to purchasers and consumers to fell and remove, each "coupe" is put up to sale separately, and thus every possible facility is given to the people to buy individually or by forming syndicates, for local or for export trade, or for domestic requirements, the widest possible employment is given to labour, and as great a provision as can with safety be given is made for the "ráb" supply. And at the same time the full possible yield of the forests is under exploitation, and consequently it is not compatible with the maintenance of a sustained yield from the forests to allow felling and extraction of timber from other portions of the forests beyond the annual "coupes," all such fellings will be at the cost of capital. To reserve some "coupes" for departmental operations would necessitate, the reservation of many "coupes" scattered in different directions, and a competition on the part of the Department with local trade for the local supply. Therefore for timber, firewood and bámbus the people should be referred to the purchasers of "coupes," and there should be no free privilege of taking for sale or barter any of these articles.

54. The Divisional Forest Officer, West Khándesh, has reported regarding the working of the new Code of Privileges in the following words:—

"The new Code of Privileges was revised at a meeting of the District Officers held in the rains. The privileges accorded to Bhils are in certain areas simply ruining the forests or preventing the forests from growing. This is especally evident in Nandurbár, Nizámpur and Pimpalner which ranges should never have been included in the North Tápti rules, as they permit, amongst other baneful privileges, the cutting of the wood of any but the 16 reserved kinds in places where there are only bushes to cut, and it is evident that the privileges are one and all shamefully abused by the Bhils who cut, lop and hack trees anyhow, sometimes removing a portion, sometimes leaving the whole untouched with a stool 3 or 4 feet high which rots and spoils reproduction. They also hack the bámbus about shamefully and destroy a dozen in getting one. The Bhils light jungle fires freely through their careless smoking. Warnings have been given times without number, but no more attention is paid by them than if the Forest Department did not exist."

The Collector of Khándesh states in paragraph 3 of his endorsement No. 4960, dated 11th July, written on the Administration Report of the West Khándesh Division:—

"Measures have been taken for suspending forest privileges next year where the villagers either originate forest fires or do not give help in putting them out. The Mámlatdárs have been told to explain personally to the Pátils of forest villages and, where possible, to the villagers, what will be result of carelessness on their part, and when the orders have been steadily enforced for a time, it is to be hoped that some improvement will be visible"

Bhils inhabit villages all over Khándesh and a privilege that allows a Bhil to cut and remove for domestic use junglewood and bámbus contains a potential element of trade and abuse, articles of forest produce lose their identity when outside of the forests, and a cart-load of timber on its way to a distant village can very easily be sold and sent off to another destination. Hence possibly the comparatively small receipts under A. *II. a, b, c,* timber, firewood and bámbus in the division.

East Khándesh containing South Tápti Tálukás.

55. The Code of Privileges which was introduced in the year 1886-87 under the authority of Government Resolutions Nos. 1670 and 7592, dated respectively 18th March 1887 and 19th September 1885, was modified by a committee of officers who met at Dhulia during the rains of 1887, and their proposals, which were based upon the suggestions made by the Forest Settlement Officer and the Divisional Forest Officer, East Khándesh, owing to difficulties and doubts which had arisen in working the code, were submitted to Government and sanctioned in their Resolution No. 7197, dated 22nd October 1887, in the Revenue Department.

Sátára.

56. Free grazing has been allowed in the gáirán lands included in forest throughout the division. Forest villagers have also been allowed as usual to collect dead and fallen wood and other minor forest produce under the orders of different Government Resolutions which have issued during the year sanctioning the settlement schemes of the tálukás of Tásgaon, Khánápur and Khatáv.

Regarding thorns Government have stated that when the Collector deems it advisable they may be granted from unclosed blocks. The Divisional Forest Officer may appeal against such orders to the Commissioner, whose decision, after hearing what may be urged by the Conservator and the Collector respectively, should be final. These orders apply to the eastern portions of the Deccan where the hill sides have been denuded of trees in years past and are now under reboisement and where thorns are the main agents of re-afforestation.

Panch Maháls.

57. The Kálol forests have been finally notified "Reserved Forests," and the following privileges have been conceded to the people in these forests under the authority of Government Resolution No. 3280, dated 22nd May 1888 :—

(*1*) *Grazing.*—Free for agricultural cattle.

(*2*) *Grass-cutting.*—Free.

(*3*) *Thorns and leaves.*—Free.

(*4*) *Minor forest produce.*—Free with exception of Mhowra and Hirda.

(*5*) *Dead-wood.*—For forest villagers.—Head-loads free, cart-loads at low rates for *boná-fide* domestic and agricultural purposes.

(*6*) *Earth and kankar.*—Free for private use.

58. In the Modása reserved forests of the Ahmedabad Collectorate which are under the management of the Collector, the following privileges have been conceded by Government Resolution No. 1551 of the 6th March 1888, but not by any rule made under Section 75 (*d*) or any other provision of the Forest Act :—

1*st*, to take free of charge flowers and fruit.

2*nd*, to take free of charge grass for thatching with right of sale and barter.

3*rd*, to take free of charge gum of gum-producing trees.

4*th*, to take free of charge the leaves of the Pipal, Vad, Piplo and tamarind for fodder.

5*th*, to take free of charge wood of *inferior* trees for domestic and agricultural purposes and for fuel. The *superior* trees being limited to the undermentioned 17 kinds :—

1. Teak.	9. Mango.
2. Blackwood.	10. Rayan.
3. Bia.	11. Bámbu.
4. Rohan.	12. Tamarind
5. Ebony.	13. Hirda.
6. Mhowra.	14. Dhavra.
7. Kalam.	15. Sadar.
8. Haladwan.	16. Kheir.

17. Bábul.

with the additional proviso that the Collector has power to give any wood that may be required by the people.

6*th*. That thorns may be taken for hedging.

7*th*. Grazing to be regulated in accordance with the orders of Government Resolution No. 7467 of the 15th September 1885. Camels and goats being entirely excluded from the forests.

59. The expenditure incurred upon the creation and constitution of forests in the Northern Circle during the year has amounted to Rs. 1,02,507-2-4, distributed thus:—

	Rs.	a.	p.
(1) Salaries and travelling allowances of Forest Settlement Officers not charged against the Forest Department	62,309	3	6
(2) Salaries and travelling allowances of establishments employed under the Forest Settlement Officers and charged in the Forest accounts and the contingent expenditure of the latter ...	18,958	2	0
(3) Demarcation of forest boundaries upon the ground by the construction of special forest boundary-marks	5,802	15	8
(4) Compensation for land and rights	15,436	13	2
Total ...	1,02,507	2	4

CHAPTER II.

SURVEYS AND WORKNIG PLANS.

(*A*).—SURVEYS.

60. The survey of the forests upon the scale of 8 inches to the mile by a Topographical Survey party of the Government of India working under the direction of Colonel A. Pullan, Deputy Superintendent in charge No. 17 (Gujarát) party, was continued in the South Thána Division, and commenced in the Násik Division, during the year.

61. The following return supplied by the Deputy Superintendent will show the progress made during the twelve months:—

Name of Táluka.	Triangulation Square Miles.	Traverse Square Miles.	Water-levelled Square Miles.	Not water-levelled. Square Miles.
Thána, Karjat and Kalyán ...	51	125 9	44 86	.....
Nándgaon and Yeola	388	725 8	.....	105 176
Total ...	439	851 7	44 86	105 176

62. The scale of 8 inches = 1 mile was selected after careful consideration of the size and description of forest-maps necessary in the Thána Collectorate, where complicated questions of local requirements in the produce of forests, of supplying employment for labour, affect the management of the State properties. Forest Officers are required to use maps frequently in connection with forest business in this Presidency, and they soon learn to appreciate the value of reliable maps in view of satisfactory forest administration, for the reason that forests in Bombay ordinarily form portions of different villages and each village has been mapped separately, and village maps exhibit a net-work of survey numbers, one or more of which go to form the forest of the village. Most of the "coupes" in the Thána Collectorate are of small area, and maps of such a scale as will show correctly the physical configuration of the country contained in the "coupe" and the details necessary to forest working over spaces of a few acres only, are wanted. Forest-maps to be practically useful should at least be, as local experience has shown, on the 8 inches scale, which corresponds with the

ordinary scale of the Bombay Revenue Survey Department, in order that boundaries may be correctly indicated and ascertained from the maps. In marking off a "coupe" on the ground a boundary stone is placed at every chain upon the line and bears a serial number; this is necessary to guard against the shifting of boundaries and the felling of trees outside the boundary-marks; prevention is the aim of forest conservancy rather than cure, for if trees are cut in another compartment beyond the limits of the "coupe" they cannot be replaced in pristine commercial value under 40 or 50 years: upon a map on the scale of 4 inches to 1 mile it is not possible to show every boundary-mark, it is not possible to show small blanks which are to be pitted over and planted, it is not possible to enter the sites of standards, it is very difficult to line out roads for the exploitation of timber, &c., in a rough hilly country like the Konkan. However, the Government of India is not convinced that the scale of 8 inches to 1 mile, as urged by the Bombay Forest Officers, is essential, and in future a normal scale of 4 inches to 1 mile is to be adopted for forest surveys. No doubt this scale may serve for the next 20 years in some parts of the Circle, and there may not be a demand for better maps to work forest grazing arrangements, the extraction of minor produce, &c., although the scale will give a map just one-quarter the size of the ordinary village-maps, but in the Konkan it goes without saying that the reduced scale will be totally inefficient. The Revenue Survey Department have already found the $8'' = 1$ mile scale to be too small for their purposes and are plotting their revision survey village-maps in this part of the country upon the larger scale of $16'' = 1$ mile.

63. The cost of the forest survey operations during the year has amounted to Rs. 39,683, although only Rs. 30,667 appear to the debit of the Department in the forest accounts of the year; the difference is owing to the fact that the Survey Department overcharged "Forests" by Rs. 9,016 in Northern Circle during 1886-87, and an adjustment of this sum has been made in the accounts of 1887-88 by a reduction of the amount upon the gross charge of the year. The cost gives a rate of Rs. 272 per square mile topographically surveyed, exclusive of the cost of maps, which forms a separate charge; this cost is very high indeed, and higher than last year when the rate came to Rs. 257 per square mile. Seeing that with the exception of a small tract in the western part of the Khándesh District measuring about 60 square miles the whole of the country of the Northern Circle has been topographically surveyed by the survey parties of the Government of India and maps of it have been published and are obtainable on the scales of 2 inches and 1 inch to the mile, it may be a question for consideration, not only, in view of possible reduction of expenditure, whether the forest-surveys in the Northern Circle require to be undertaken by such costly machinery as a survey party of the Government of India, with a Deputy Superintendent at its head whose salary exceeds that of a Conservator of Forests. The special forest-survey work upon already topographically surveyed and mapped ground should obviously be carried on purely from a forest point of view, and should therefore be a technical survey; it should be required to enter the prescribed topographical details, and to arrange and demarcate upon the ground the "*parcellement*" of the forests, concurrently with the survey to tabulate an approximately correct register of the standing crop in particular areas, not only as to the kinds of trees, but also as to density of growth and capability, and also to note the location and extent of blanks, and to furnish more material assistance *pari passu* with surveying in the preparation of forest-working schemes than the mere production of maps of the ground can afford; professional knowledge of sylviculture, which, Survey Officers, not being Forest Officers, do not possess, is necessary for the satisfactory performance of such work, and the forest-survey should possibly be, as in France, a part of the working-plans branch, and with a small staff of skilled topographical surveyors working under the orders of the Divisional Forest Officer Working Plans: the cost of forest-surveys and working plans in the Northern Circle would probably be reduced by more than 60 per cent. under such arrangement.

(*B*).—WORKING PLANS.

64. Mr. T. B. Fry, Deputy Conservator of Forests, 3rd Grade, held charge of the Working Plans Division throughout the year. The subordinate staff

consists of field and office establishments, and they are all borne upon the "Temporary Establishment's" list. No alteration in the strength of the office establishment was made during the year. The field establishment at first sanctioned by Government consisted of 8 surveyors with 2 Enumerators or Mukádams to each surveyor; but this staff was afterwards found to be insufficient to carry on the work, and it was consequently increased in November 1887, when the working season opened by 5 additional surveyors.

65. Mr. Fry and his establishments were employed throughout the year in the Thána District. In April and May boundaries of reserved forests were defined in the Khálápur and Karjat ranges of the South Thána Division by cairns, in order to facilitate the work of the Topographical Survey parties engaged in preparing the 8-inch forest-maps, and during these two months the line was completed in 10 villages. A few cairns were also erected in the Sálsette Range of the North Thána Division. The work of marking "coupes" in the two settled tálukás of Kalyán and Bhiwndi of South Thána was also taken in hand, in the former a "coupe" was laid out on the ground in each of the fourteen "blocks," which it was deemed advisable to work, while in the latter a "coupe" was laid out in each one of the twenty "blocks" into which the "Reserved Forests" have been separated. Forty-nine "coupes" were laid out in Bassein, Máhím, Váda and Umbargaon ranges, that is to say, that every block in which it was proposed to make fellings and in which "coupes" had not previously been marked was dealt with before the commencement of the rainy season. Field work was re-commenced on the 7th November 1887; boundary demarcation was undertaken in the Kalyán Táluka and carried on continuously from the Bowa Malang Range passing round the Mátherán Range, and thence along the Ghát's' line beginning with the most westerly village on the Panvel boundary. From November to the end of the official year, *i.e.*, March 1888, 186 miles of boundary lines were defined by 3,636 marks, including 556 large and 3,080 small ones, at a total cost of Rs. 1,790. The cost per mile $\frac{1,790}{186}$ = Rs. 9-10 is moderate, considering that the average number of cairns to the mile is over 19·5, or nearly one to every four chains of boundary line. The cost per cairn works out to an average of 6·03 annas for a small and Rs. 1-2 for a large one.

During the above-mentioned period 136 "coupes" were laid out, which at an average area of 45 acres per "coupe" gives a total area dealt with of 6,120 acres. The average cost per "coupe," exclusive of the pay of the field establishment, amounted to Rs. 5-13-0.

66. The area of the forests in the Thána Collectorate, with which the Working Plans Officer was called upon to deal at once, is so enormous—upwards of 1,300 square miles—and the forest block required to be formed necessarily so numerous, that all idea of a detailed examination block by block, of carrying out valuation surveys on a large scale, had to be abandoned. However, in the actual working of the forests, with coupes of known area, and a careful record being kept of material exploited, and the timber reserved, there can be no doubt that a fair knowledge of the annual yield under existing conditions will be arrived at. Necessity has compelled the Working Plans Division to lay out single "coupes" in the various blocks instead of sub-dividing each block serially into compartments, upon the ground, taking one of the latter as a "coupe", because it was desired that the whole of the forests should be brought under systematic working as soon as possible, the demand for doing so being as urgent in one direction as in another. Could each block have been taken up in turn and differentiated entirely it would have been less difficult to make the boundaries of coupes to coincide with natural features on the ground, because provided the proper number of compartments were located in a given block there would be no obligation to make them all of exactly equal size, whereas under the plan followed it would have been unsafe to allow any great deviation from what may be termed the normal area of the "coupe" for each individual block.

67. The adoption of a coppice and standard system for the whole of the Thána forests, and the fixing of the rotation at 40 years, settled the lines upon which the field work must be executed, and the following system was adopted in all cases where the necessary maps were available :—

(*a*) Each block of a forest having been marked off on 4″ topographical sheets and the area ascertained by careful scaling, and when necessary a deduction made on account of unworkable areas, such as very steep slopes, high hill tops, &c., the balance of area was registered as the "workable area" of the block and $\frac{1}{40}$ of it taken as the "normal coupe."

(*b*) "Coupes" as nearly as possible of normal area were marked off for each block on duplicate copies of the 4″ topographical sheets by the Divisional Forest Officer himself.

(*c*) The actual areas of the "coupes" so marked on the map were then ascertained by scaling and registered.

(*d*) The surveyors when sent into the forests to lay off "coupes" were supplied with topographical sheets upon which one or more of "coupes" had been drawn and the duplicate copies were retained by the Working Plans Officer.

(*e*) Each surveyor was required to submit a map of each "coupe" laid out by him showing the position of marks erected to define the boundaries, and lengths of various sides, and to return to the Working Plans Officer each topographical sheet as soon as all the "coupes" shown on it were laid out on the ground.

(*f*) The Working Plans Officer on receipt of the "coupe-map" compared it with the topographical sheet in his possession, scaled off the area and noted it on the "coupe-map" and finally entered on a separate register the range, block, and any deviation from the normal area which might be found to have occurred.

68. The above procedure could not always be followed as duplicate copies of the 4″ maps were not in all cases in hand, and so far as Kalyán was concerned, 2″ maps only were available, the following plan was therefore adopted :—

(*a*) Working Plans Officer himself marked off on the topographical sheets the "coupe" for each individual block, personally fixing its area by scale.

(*b*) The "coupe" so marked was then redrawn on ordinary paper to a scale of 8″ to the mile, certain details, such as village boundaries, roads, rivers, &c., being also entered.

(*c*) These "coupe-maps" were then examined, tested for area, compared with the topographical map, and initialled by the Working Plans Officer.

(*d*) Furnished with these "coupe-maps" the surveyors were sent into the forests with instructions to define the boundaries of the "coupes" by cairns. In addition to these moveable marks, trees at short intervals along the boundary line of the "coupe" are blazed, numbered in red paint, and the species of tree, its position and size, registered.

69. The following statement will show the number of blocks formed by the Divisional Forest Officer Working Plans in the several ranges of the North and South Thána Forest Divisions for the working operations of the season 1888-89 :—

No.	Name of Range.	Number of Blocks.	Total Area in Acres.	Average Area per Block in Acres.	Remarks.
	North Thána.				
1	Sálsette	10	14,641	1,464	
2	Bassein	23	52,256	2,272	
3	Máhím	41	71,740	1,756	
4	Dáhánu	28	64,835	2,316	
5	Umbargaon	9	17,611	1,957	
6	Váda	25	78,460	3,138	
	South Thána.				
7	Kalyán	17	28,530	1,678	
8	Bhiwndi	20	36,530	1,826	
9	Mokháda	17	47,960	2,821	
10	Karjat	20	51,954	2,598	
11	Murbád	19	66,400	3,495	
	Total Number of Blocks ...	229	...	...	

70. During the rainy season Mr. Fry delivered a series of lectures to the Forest Class in the College of Science, Poona, and in consultation with the Divisional Forest Officer, Poona, a provisional scheme for the working of the riverside Bábul reserves of Poona Division was prepared, and on being approved by the Conservator of Forests, Northern Circle, "coupes" were laid out and arrangement made for felling and planting operations to be carried out on the lines suggested. During the last month of recess the Working Plans Officer was, in addition to his other duties, placed in charge of the Poona Divisional Forest Office.

71. The expenditure under *A VIII c.* Surveys during the year amounts to Rs. 48,968-11-4, including the cost of forest surveys by the Topographical Survey party of the Government of India, which absorbs Rs. 39,683 of the above sum.

CHAPTER III.

PROTECTION AND IMPROVEMENTS.

1—ESTABLISHMENT.

72. The superior Forest Staff allotted to the Northern Circle consists of one Conservator of Forests and thirteen Deputy and Assistant Conservators of Forests for the administration of the forests in twelve divisions.

73. Of the Deputy and Assistant Conservators, the following enjoyed leave during the year:—

(1) Mr. R. C. Wroughton, Deputy Conservator of Forests, 2nd grade, on privilege leave from 30th September to 29th October 1887.

(2) Mr. G. P. Millet, Assistant Conservator of Forests, 1st grade, on privilege leave for 3 months from 5th September 1887.

(3) Mr. R. S. Fagan, Deputy Conservator of Forests, 4th grade, returned from furlough on the 18th June 1887.

And the undermentioned officers have received promotions:—

(1) Mr. W. G. Betham from 3rd to the 2nd grade of Deputy Conservator of Forests from 6th December 1887.

(2) Mr. R. C. Wroughton from 3rd to the 2nd grade of Deputy Conservator from 21st April 1887.

(3) Mr. T. B. Fry from 4th to the 3rd grade of Deputy Conservator from 21st April 1887.

(4) Mr. C. Greatheed from 4th to the 3rd grade of Deputy Conservator from 6th December 1887.

(5) Mr. A. D. Wilkins from Assistant Conservator, 1st grade, to Deputy Conservator, 4th grade, from 21st April 1887.

(6) Mr. F. Gleadow from Assistant Conservator, 1st grade, to Deputy Conservator, 4th grade, from 14th July 1887.

(7) Mr. G. P. Millet from Assistant Conservator, 2nd grade, to the 1st grade of Assistant Conservator from 21st April 1887.

Messrs. W. G. Clabby and W. A. Wallinger were confirmed as Sub-Assistant Conservators from 7th May and 20th June 1887 respectively.

Mr. G. K. Betham, Deputy Conservator, 3rd grade, was transferred to the Southern Circle in the month of October 1887.

74. Of the class Sub-Assistant Conservators there are 7 appointments assigned to the Northern Circle, and they have all been occupied throughout the year. Mr. N. B. Oke, Sub-Assistant Conservator of Forests, 1st grade, was on sick leave from 25th April to 26th September 1887. Mr. G. K. Shahane on privilege leave from 5th April 1887 to 5th July 1887, and on sick leave from 25th February 1887 up to the end of the year, and Mr. W. R. Gaunde, Sub-Assistant Conservator, 3rd grade, on privilege leave from 21st November to 20th December 1887.

75. Mr. G. F. R. Blackwell, Sub-Assistant Conservator, 3rd grade, was promoted to Assistant Conservator of Forests, 3rd grade, and was transferred to Burmah in the month of October 1887, and Mr. A. R. Maidment was appointed Sub-Assistant Conservator under Government Resolution No. 6910, dated 11th October 1887.

76. The areas of forest reservations contained within each division are spread over a wide expanse of country, and the size of a forest division is very large for one officer to control, as the following table will show:—

No.	Division.	Territorial Area.	Forest Area.		
			Reserved.	Protected.	Total.
		Sq. m.	Sq. m.	Sq. m.	Sq. m.
1	North Thána	1,834	285	299	584
2	South Thána	2,102	325	353	678
3	East Khándesh	4,361	725	68	793
4	West Khándesh	5,583	1,238	195	1,433
5	Násik	5,940	1,107	...	1,107
6	Ahmednagar	6,666	823	11	834
7	Poona	5,348	728	...	728
8	Sátára	4,988	664	...	664
9	Sholápur	4,521	271	...	271
10	Surat	1,662	748	...	748
11	Panch Mahals	1,613	180	140	320
	Total ...	44,618	7,094	1,066	8,160

77. Thus it will be seen that the average size of a forest division in the Northern Circle is about 742 square miles, which is 12 times larger than the average size of a forest division in France, where experience extending over generations of forest administration has shown how far the supervising capability of a single officer can profitably extend.

78. Financial considerations will not allow at the present day of forest divisions being so greatly increased in number and so considerably reduced in size as to bring them individually and severally within the supervising capability of one European officer in that detailed manner necessary to the obtainment of satisfactory administration, both as regards the forests in their conservancy and works, *i.e.*, protection under the Forest Law, exploitation of timber, regeneration and reproduction, and as regards also the people who come to the forests to trade, to obtain their requirements of timber and other forest produce, to exercise rights which the Forest Settlement Officers may have awarded them, to enjoy privileges of appropriation conceded to them by Government, and who are consequently brought into contact with the Forest subordinates. But it is evident in view of the vast internal improvement and augmentation going on of the capital value of the forests, of the great progressive expansion promised thereby of the forest revenues, of the vital importance of the forests in their relation to agriculture, to land revenue, to employment of labour and to food-supply,—in short to the augmentation of the general prosperity of the country, that the staff of superior Forest Officers in the Northern Circle should be very largely increased within the coming decade. The numbers of appointments of Deputy and Assistant Conservator of Forests to be recruited by trained Forest Officers from Cooper's Hill, must be added to considerably, and in the meanwhile in order to keep down the cost it may be expedient to increase the number of appointments of Sub-Assistant Conservators of Forests, so that these officers may serve as executive assistants of the Divisional Forest Officer to be his eyes and his mouthpiece.

79. In the interests of efficient forest administration, and of all the advantages to be derived therefrom, not only should the number of forest divisions be increased with a corresponding expansion of the Imperial branch of the Forest Service, but the prospects of the Department should receive some im-

provement; for as at present arranged no Forest Officer below the rank of Conservator of Forests can possibly satisfy the provisions of Section 113 of the Civil Pension Code and obtain the highest possible pension open to an Uncovenanted officer of Rs. 5,000 per annum, the pay of a Deputy Conservator of Forests, 1st grade, having been fixed at Rs. 900 per mensem, so that his average emoluments do not aggregate Rs. 12,000 in the year. And as the proportion of Conservators' appointments is very small, the Forest Officer is practically shut out from obtaining a higher pension than Rs. 4,000 per annum. In the Police Department of this Presidency the Superintendent, 1st grade, draws Rs. 1,000 per mensem, and it may not be unreasonable to urge that the emoluments, as defined by the codes of the Financial Department, of a Deputy Conservator of Forests, 1st grade, should be fixed at no lower figure. It may also be remarked that a Conservator of Forests of the lower grade receives a smaller salary than does a Superintendent of the Revenue Survey Department, a Superintending Engineer, an Educational Officer of the 1st and 2nd grades, a Superintendent of Telegraphs, &c., while his responsibilities are at least equally heavy, his health-risk far greater in malarious forests, and his duties as laborious. The Conservator has been required to report upon these subjects to Government during the year, and he was examined also before the Sub-Committee of the Public Service Commission at Poona during the rains of 1887 upon the requirements of the Forest Service in India, the nature and scope of its duties, and the best means to be adopted for its recruitment, and therefore the foregoing remarks may not be considered to be out of place in the recorded history of the Forest Department of the Northern Circle for the year.

80. The numerical strength and constitution of the Subordinate Forest Protective Establishment has remained unchanged during the year; their monthly cost amounts to Rs. 21,503, and their distribution among the different divisions is as under :—

No.	Forest Division.	Number of Ranges.	Range Forest Officers.							Forest Guards.						Remarks.
			Rangers.				Foresters.									
			Rupees 100.	Rupees 80.	Rupees 60.	Rupees 50.	Rupees 40.	Rupees 30.	Rupees 20.	Rupees 15.	Rupees 12.	Rupees 10.	Rupees 9.	Rupees 8.	Rupees 7.	
1	North Thána ...	6								6	14	25	25	70	80	The pay of the Rangers and Foresters is personal and the men are transferred from one Range to another and from one Division to another as the exigencies of the service may require. Therefore the number of appointments in each grade is shown in lump for the whole Circle.
2	South Thána ...	8								8	14	25	23	70	115	
3	East Khándesh ...	13								8	16	20	20	40	75	
4	West Khándesh ...	10								7	14	18	18	50	102	
5	Násik	14								10	20	25	26	50	158	
6	Ahmednagar ...	11	3	4	6	12	20	30	30	6	12	22	22	50	85	
7	Poona	11	These officers are subject to transfer from one Division to another.							9	17	26	25	60	120	
8	Sátára	14								9	18	24	22	57	102	
9	Sholápur	7								3	6	11	8	16	68	
10	Surat...	6								2	4	4	6	18	27	
11	Panch Mahals ...	5								2	5	10	10	30	48	
	Total ...	105	3	4	6	12	20	30	30	70	140	210	205	511	980	

81. In addition to the permanent staff given above a temporary establishment of 15 forest guards on Rs. 8 each and 30 on Rs. 7 each in the Poona Division, and of 3 forest guards on Rs. 8 each and 3 on Rs. 7 each in the Násik Division, was in entertainment all the year round for the proper protection of forests which would otherwise suffer from defective conservancy owing to insufficient numerical strength.

82. The Divisional Forest Officer, North Thána, reports that much difficulty in protection and in the performance of works is still felt in consequence of the reduction of 39 forest guards which was made under Government Resolution No. 2586, dated 10th September 1885, and that the protective establishments in Váda, Bassein and Umbargaon Ranges urgently need strengthening. Looking to the fact that the Thána forests are open on all sides to be depredated by a large section of the local population who subsist mainly upon wood-cutting and carrying and are readily employed by timber dealers to prey on the

forests and upon the Government timber on occupied lands, it certainly is not a measure of sound economy to reduce the protective establishment at the sacrifice of forest produce worth many times the cost of the establishment in salaries, &c.

83. The Divisional Forest officers of both East and West Khándesh complain of the insufficiency of the protective staff; and experience has shown that in a district like Khándesh with an enormous extent of forest reservation where wholesale cuttings and appropriation of timber and other forest produce are allowed under privileges, where large quantities of timber are in transit in all directions during fair season, and teak properties outside of forests are valuable, forest conservancy cannot be established upon an efficient footing in the absence of a sufficient number of forest guards to watch the State forests and the Government timber, and to maintain close supervision over the timber traffic.

84. A number of Forest subordinates in the different divisions of the Northern Circle, as detailed below, has been punished by dismissal from the service for criminal breach of trust, dishonesty, disobedience, neglect of duty, absence without leave, extortion, &c. :—

(1) North Thána, one Peon in the office of the Sub-Assistant Conservator of Forests and 1 Round Guard.

(2) South Thána, 2 Round and 9 Beat Guards.

(3) East Khándesh, 2 Beat Guards.

(4) Násik, 4 Round and 13 Beat Guards.

(5) Poona, 2 Beat Guards.

(6) Sátára, 4 Beat Guards.

(7) Surat, 3 Round and 5 Beat Guards.

(8) Panch Maháls, 1 Round and 6 Beat Guards.

85. It is undoubtedly highly desirable in every way that the status of the subordinate forest executive establishments should be improved, and a greater *esprit de corps* infused, a careful selection of candidates to be followed by a good technical education is only a part of the means whereby these establishments can be placed upon a satisfactory footing. The first and great necessity is to have a sufficient number of fairly paid appointments with encouraging prospects of promotion in reward of merit to make the service attractive. The maximum pay of a Forest Ranger in the Bombay Presidency is Rs. 100, while in all the Provinces under the Government of India and in the Madras Presidency the Forest Ranger's pay goes up to Rs. 120 per mensem; then again with 105 forest ranges in the Northern Circle there are only 25 appointments of forest rangers, 80 ranges being in charge of Foresters on salaries of from Rs. 20 to Rs. 40.

86. The ranges which correspond with the revenue sub-divisions of the country are of very considerable extent, and the property contained in them which for conservancy and works is under the control of the Range Forest Officer is of the very greatest importance in other senses than the monetary worth, and is exceedingly valuable also in the light of forest revenue. The following table gives the number of ranges and the average area of forest in a range in the several divisions :—

No.	Division.	Number of ranges.	Average Area of Forest in a range in Square Miles.
1	North Thána	6	97
2	South Thána	8	84
3	East Khándesh	13	61
4	West Khándesh	10	143
5	Násik	14	79
6	Ahmednagar	11	75
7	Poona	11	66
8	Sátára	14	47
9	Sholápur	7	38
10	Surat	6	124
11	Panch Maháls	5	64

87. The responsibilities attaching to a Range Forest Officer in the Northern Circle, not only in the treatment of the forests in his charge, in so far as the maintenance, augmentation and utilization of the capital property are concerned, but in the matter of the money in hard cash, consisting of collected revenue, of advances made to him from time to time for expenditure upon forest operations and upon salaries, which pass through his hands, and in connection with which he has to keep and render accounts, are very onerous. The following figures of cash transactions of ranges in two divisions of the Circle, one North Thána where dealings are large, and the other Sholápur where the business is so to speak comparatively small, will show what large sums of money pass through the hands of a Range Forest Officer during the year :—

Division.	No.	Ranges.	Amount.
			Rs.
North Thána ...	1	Umbargaon ...	26,970
	2	Dáhánu	77,438
	3	Máhím	74,115
	4	Bassein	47,485
	5	Váda	46,246
	6	Sálsette	18,545
Sholápur	1	Sholápur ...	10,270
	2	Bársi	4,628
	3	Mádha	6,528
	4	Karmála	9,175
	5	Pandharpur ...	4,150
	6	Sángola	4,612
	7	Málsiras	3,815

88. It may therefore be urged with a strong force of reason that no forest-range should properly be entrusted to the charge of a subordinate of lower rank than of Ranger, and drawing a lower rate of salary than of Rs. 50 per mensem. With at least 100 appointments upon salaries rising from Rs. 50 to 120 the subordinate forest establishment of the Northern Circle should prove an attractive service to the races of the native population who are naturally of active, energetic habits of life, and are consequently better adapted for an out-door life in the forests than races of more sedentary habits of life ; for after all men of energy and activity who can withstand exposure and hard work in the sun, who possess a vigorous constitution and consider it a delight to court adventure, and at the same time have a fair technical knowledge of professional work, are more likely to turn out satisfactory Range Forest Officers.

89. The ranges being very large, a Range Forest Officer requires assistance in the performance of his executive duties to supervise and direct technical works and to maintain superintendence over Beat Guards employed upon the police work of the forests. In the North Thána Division alone there are 156 forest blocks with 156 "coupes" under the axe and subjected to exploitation of timber and other forest produce during the year ; and in order to mark out the "coupes" to prepare them for the market, to overlook the operations of the contractors and purchasers in felling and bringing out timber, &c., to see that the reserves are not cut or injured, to see that stumps are levelled and cut clean, to check the outturn of the "coupes," to control the timber and other forest produce in transit, &c., &c., a forest subordinate of fairly good technical education is required to be in charge of one or more but not exceeding in any case three forest blocks, consequently the numbers of foresters upon salaries graduated from Rs. 20 to 40 inclusive and of forest guards of the upper grades on salaries of Rs. 10, 12 and 15 who are technically termed "Round Guards," are required to be largely increased to allow of a satisfactory management of forest works and of efficient protection. Also in the matter of Beat Guards there should, of course, be one or more of these forest guards for the police work of every forest block.

90. A certain number of Round Guards are at present withdrawn from their legitimate duties in the forests to act as clerks of Range Forest Officers in order to keep and render their accounts and conduct their office business generally :

thus in the Poona Division 11 Round Guards are constantly employed upon clerical work only. In some ranges where forest works are many, and the accounts are heavy, the Range Forest Officer requires two men for his office work. It is very desirable that all these Round Guards should be set free from the desk for their executive and protective duties in the forests by the appointment of clerks belonging to the office establishment to perform the range office work.

91. The "Office Establishments" in entertainment, and their distribution during the year, are given in the following table which exhibits their monthly cost. There have been no serious offences among the members of this branch, and the work performed by them has been generally satisfactory :—

No.	List of Offices.	Number and Gradations.											Monthly Cost.
		Clerks.								Peons.			
		Rs. 100	Rs. 80	Rs. 60	Rs. 50	Rs. 40	Rs. 30	Rs. 20	Rs. 15	Rs. 10	Rs. 9	Rs. 8	
													Rs.
1	Conservator's "Direction"...	1	1	1	2	2	2	2	...	1	1	5	579
2	North Thána Divisional ...	...	...	...	1	1	1	1	2	...	1	3	203
3	South Thána do. ...	...	...	...	1	1	1	1	2	...	1	3	203
4	East Khándesh do. ...	...	...	...	1	...	1	2	2	...	1	3	183
5	West Khándesh do. ...	...	...	...	1	...	1	2	2	...	1	3	183
6	Násik do. ...	...	...	...	1	...	1	2	2	...	1	3	183
7	Ahmednagar do. ...	...	...	...	...	1	1	2	2	...	1	3	173
8	Poona do. ...	...	...	...	1	...	1	2	2	...	1	3	183
9	Sátára do. ...	...	...	...	1	...	1	2	2	...	1	3	183
10	Sholápur do. ...	...	...	...	...	1	1	2	1	...	1	3	158
11	Surat do. ...	...	...	...	1	...	1	2	2	...	1	3	183
12	Panch Maháls do. ...	...	...	...	...	1	1	2	1	...	1	3	158
13	7 Sub-Assistant Conservators, Sub-divisional	...	...	...	...	...	...	...	7	...	...	14	217
	Total ...	1	1	1	10	7	13	22	27	1	12	52	2,789

92. The total expenditure incurred upon forest establishments during the year has amounted to Rs. 4,55,552-7-4 as under :—

	Rs.	a.	p.
B. *I. a.*—Conservator's salary	18,000	0	0
B. *II. a.*—Conservator's travelling allowance ...	2,400	0	0
B. *I. b.*—Superior Officers' salary	96,103	14	2
B. *II. b.*—Superior Officers' travelling allowance ...	26,710	15	9
B. *I. c.*—Subordinate Protective Establishments' salary...	2,53,254	4	3
B. *II. c.*—Subordinate Protective Establishments' travelling allowance	14,370	1	8
B. *I. d.*—Office Establishments' salary	33,657	13	2
B. *II. d.*—Office Establishments' travelling allowance ...	11,055	6	4
Total ...	4,55,552	7	4

93. Under the orders contained in Government Resolution No. 1837, dated 16th July 1887, the subordinate protective establishment, including "Rangers," "Foresters," "Round Guards" and "Beat Guards," have been put into uniforms of recognised and prescribed description. A sum of Rs. 11 per man per annum has been provided to defray the cost of the uniforms; this amount is made up of deductions of 8 annas per mensem from each subordinate *plus* a capitation grant Rs. 5 given by Government.

94. The uniforms prescribed are as under :—

For Rangers and Foresters.

1. A Norfolk jacket of "Hull" kháki shade No. 2.
2. Knickerbocker breeches.
3. Gaiters lined with canvas.
4. White metal buttons on the jacket, each bearing a crown and the word "Forests."

5. Greatcoat with cape.
6. *Head dress.*—White helmet with green pagri for East Indians, Pársis and such others as may prefer a helmet to a green turban for natives generally with a silver badge.
7. Boots to be self-provided.

Rank is denoted by black mohair braid on the cuff of the Norfolk jacket:—

Forester, 20 Rs., 3rd grade, has 1 band.
Do. 30 „ 2nd „ 2 bands.
Do. 40 „ 1st „ 3 „
Ranger, 50 Rs., 4th grade, has an Austrian knot.
Do. 60 „ 3rd „ „ with 1 band.
Do. 80 „ 2nd „ „ with 2 bands.
Do. 100 „ 1st „ „ with 3 „

For Forest Guards.

1. Kilmarnock cap such as the Police wear with a badge consisting of capital letters on brass or white metal denoting the Division.
2. Greatcoat without cape.
3. Kháki suit consisting of a blouse and Knickerbocker trousers.

"Beat Guards" wear inverted chevrons on the lower fore-arm, 1 stripe for Rs. 7, 2 for Rs. 8, and 3 for Rs. 9.

"Round Guards" wear chevrons surmounted by an Imperial crown on upper fore-arm:—

10 Rs. Guard, 1 stripe and crown.
12 „ „ 2 „ „
15 „ „ 3 „ „

95. The clothing provided is of a very suitable and serviceable pattern, for it gives the subordinates a smart appearance, and is appreciated by them.

2.—GENERAL PROTECTION AND BREACHES OF THE FOREST LAW.

96. The following statement gives the number and result of prosecutions of "forest offences" in the year under report and the previous year:—

No.	Division.	1886-87.		1887-88.		Percentages of Failures.	
		Prosecutions.	Acquittals.	Prosecutions.	Acquittals.	1886-87.	1887-88.
1	North Thána	42	10	61	22	23·8	36·
2	South Tháua	81	28	185	34	34·5	18·3
3	East Khándesh	25	9	15	5	36·	33·3
4	West Khándesh ...	53	21	71	20	39·6	28·1
5	Násik	150	18	79	19	12·	24·
6	Ahmednagar	146	64	53	14	43·8	26·4
7	Poona	99	24	66	20	24·2	30·3
8	Sátára	87	71	44	10	81·7	22·7
9	Sholápur	88	25	77	23	28·4	29·8
10	Surat	4	2	33	3	50·	9·
11	Panch Maháls	36	6	25	1	16·6	4·
	Total ...	811	278	709	171	34·2	24·1

97. At the close of last year 85 cases of "forest offences" were awaiting trial, and during the year 736 new cases were presented, making a total of

821 cases in all. Of these 709 cases were disposed of, leaving 112 cases over for trial at the close of the year; they were distributed as under :—

No.	Division.	Number of cases.
1	North Thána	7
2	South Thána	19
3	East Khándesh	8
4	West Khándesh	39
5	Násik	10
6	Ahmednagar	9
7	Poona	...
8	Sátara	8
9	Sholápur	10
10	Surat	2
11	Panch Mahâls	...
	Total ...	112

93. The number of prosecutions shown above for "forest-offences" in the Circle, looking to very large expanse of country covered by the forests, to their scattered nature, to the dense populations living in the neighbourhood of the forests, to the value of the timber and other forest produce commands in markets close at hand and at a distance, and to the temptations offered on all sides by the presence of trees, cannot be said to be large, and it is not possible to urge that the Forest Law is worked with undue severity. South Thána heads the list in the number of prosecutions, but it gives an average of 3 cases to the range per month. The proportion of failures in the prosecution of forest offenders will always be high, because villagers do not like to give evidence against their neighbours residing in the same village, and the disposal of a forest case generally stretches over so long a period that unwilling witnesses who are chiefly in the special circumstances of forest crimes men of a comparatively low standard of intelligence, are apt to forget important events, and at the same time are often found more ready to give evidence in favour of the accused than against him, and to render before the Magistrate a very different version of the case as concerning the accused to that which they stated at the time of the preliminary inquiry.

99. The "forest offences" in respect of which prosecutions have been instituted during the year, when classified under the four different heads of crime as prescribed by the Forest Department Code, appear as under :—

No.	Forest Division.	Character of Offences.				Remarks.
		Injury to Forest by Fire.	Unauthorized felling or appropriation of Wood and minor Forest Produce.	Grazing without permission or in tracts in which Grazing is prohibited.	Other Offences.	
1	North Thána	1	67	.....	...	
2	South Thána	3	179	.....	9	
3	East Khándesh	...	11	4	5	
4	West Khándesh ...	13	35	4	20	
5	Násik	1	71	5	6	
6	Ahmednagar	...	10	26	12	
7	Poona	...	32	19	12	
8	Sátára	...	36	9	5	
9	Sholápur	...	6	67	8	
10	Surat	...	19	10	6	
11	Panch Mahâls	...	25	.....	...	
	Total ...	18	491	144	83	

100. In consequence of the exemption from the operation of the Pass Rules under Section 41 of the Indian Forest Act of timber grown in occupied survey numbers the forests of which adjoin, and in many instances interlace the Government reserves, and in consequence of concessions granted from time to time to wild tribes such as Bhils, Thákurs, Wárlis, &c., the protection of forests continues to be less satisfactory than could be desired and than could be ensured under different conditions. The facility with which timber stolen from the Government forests can be passed off as Málki-number-wood renders the detection of forest offenders a matter of great difficulty.

101. A proper conservancy of the forests can only be obtained by a numerically sufficient protective establishment kept to their work by European superintendence combined with such a disposal of forest offences as will prove deterrent to the people who prey upon the Government forests in one way or the other. Protection is the key-stone of forestry; for without effective preservation of old trees and young growth it is hopeless to look for improvement in the standing crop of timber, for augmentation of the productive powers of forests, for reboisement of denuded lands, and for such a legitimate increase of forest revenues as may be reasonably required.

102. In the following comparative statement will be found the number of "forest offences" detected in the "Protected forests" which have not yet been subjected to a forest settlement; consequently these offences are dealt with by Assistant Collectors under Section 43 of the Land Revenue Code :—

Forest Division.	1886-87.					1887-88.					Remarks.
	Number of Cases.	Value of Forest Produce.	Acquittals.	Convictions.	Amount of Fines.	Number of Cases.	Value of Forest Produce.	Acquittals.	Convictions.	Amount of Fines.	
		Rs. a. p.			Rs. a. p.		Rs. a. p.			Rs. a. p.	
North Thána...	13	150 4 0	...	13	223 1 3	13	66 10 0	...	* 11	31 10 0	* 2 cases pending at the close of the year.
South Thána ...	141	...	...	141	484 3 6	92	355 9 0	...	92	104 4 2	
Total ..	154	150 4 0	...	154	707 4 9	105	422 3 0	...	103	135 14 2	

103. A comparative statement showing the number of cases compromised under Section 67 of the Forest Act is given below as directed in Government Resolution No. 3527 of the 2nd May 1884 in the Revenue Department :—

No.	Forest Division.	Taken into Court.		Compromised under Section 67 of the Forest Act.		Total No. of Cases.	
		1886-87.	1887-88.	1886-87.	1887-88.	1886-87.	1887-88.
1	North Thána	42	68	23	26	65	94
2	South Thána	81	191	107	182	188	373
3	East Khándesh	23	20	117	153	140	173
4	West Khándesh ...	89	72	195	254	284	326
5	Násik	151	83	828	714	979	797
6	Ahmednagar	138	48	1,805	2,115	1,943	2,163
7	Poona	100	63	463	449	563	512
8	Sátára	87	50	54	186	141	236
9	Sholápur	88	81	625	977	713	1,058
10	Surat	4	35	10	21	14	56
11	Panch Mahals	36	25	78	65	114	90
	Total ...	839	736	4,305	5,142	5,144	5,878

104. The sums realised from cases compounded under Section 67 of the Forest Act in the several divisions of the Northern Circle during the year under

report are given in the following statement as directed in Government Resolution No. 8738, dated 24th December 1887, in the Revenue Department:—

No.	Division.	Amount.		
		Rs.	a.	p.
1	North Thána... ...	100	2	0
2	South Thána... ...	933	11	9
3	East Khándesh ...	353	0	6
4	West Khándesh ...	616	9	3
5	Násik...	1,289	2	11
6	Ahmednagar	1,719	12	9
7	Poona...	1,227	15	9
8	Sátára...	268	13	10
9	Sholápur	1,226	2	8
10	Surat	183	10	0
11	Panch Maháls ...	83	11	6
	Total ...	8,002	12	11

105. The number of cases compounded has increased in all the divisions with the exception of Násik, Poona and Panch Maháls. In some cases detected offenders were released with warnings in the first instance as ordered in Government Resolution No. 2437, dated 21st March 1885, the offence being a trivial one or the assessed value of the property seized being considered to be too small to render a prosecution desirable. Generally in the Northern Circle the cases compounded are of cattle trespass, the lopping of a few side branches of trees, &c., and such like "minor offences," the prosecution of which would not serve the interests of forest administration. In this connection the Divisional Forest Officer, West Khándesh, reports "that the compounding of offences is decidedly beneficial; it acts as a slight deterrent it is true compared with criminal convictions, but had the number of cases been taken into Court the subordinate officers, especially of the higher grades, would have had all their time occupied in prosecuting to the detriment of other work, and had the cases been neither prosecuted nor compounded the people concerned would have no fear of any action that the Department might take in the future."

106. Some of the cases compounded in the Surat Division were serious and deliberately planned thefts, and the Divisional Forest Officer explains in the following words that he was compelled to compound these cases:—

"The northern border joining Baroda suffers heavily from the depredations of Baroda subjects who come in gangs at night with carts and fetch away timber. They are exceedingly difficult to catch, and proof to satisfy the Courts is still more unobtainable. As the nearest Magistrate is at Pimpalner, a distance of some 50—60 miles across the wildest country, the power of compromise is here indispensable."

107. The following table shows the number of cattle of different kinds impounded in the several divisions of the Northern Circle during the year under Section 69 of the Forest Act for trespassing in plantations or in closed portions of forest reservations:—

No.	Forest Division.	Cows and Bullocks.	Buffaloes.	Camels.	Horses.	Asses.	Sheep.	Goats.	Total.
1	North Thána ...	193	5	...	...	...	...	...	198
2	South Thána ...	14	...	...	...	...	...	...	14
3	East Khándesh ...	5,299	530	...	3	...	390	3,010	9,232
4	West Khándesh...	2,402	317	...	145	...	1,921	2,101	6,886
5	Násik	4,803	410	3	15	66	8,279	3,920	17,496
6	Ahmednagar ...	29,775	2,197	...	271	104	19,982	8,668	60,997
7	Poona	10,732	922	...	70	165	10,246	3,748	25,883
8	Sátára	4,827	1,783	...	47	30	6,950	1,315	14,952
9	Sholápur... ...	17,760	1,916	6	112	31	4,550	1,139	25,514
10	Surat	38	19	...	...	...	47	121	225
11	Panch Maháls ...	29	19	13	1	...	...	750	812
	Total ...	75,872	8,118	22	664	396	52,365	24,772	1,62,209

108. It will be seen from the statement given above that a large number of cattle was impounded in the Ahmednagar Division. The Divisional Forest Officer reports :—

"It has been most difficult to keep village cattle from grazing in closed blocks; one has only to go over one of these and see the cattle tracks in every direction, some of the closed blocks having the appearance of free grazing lands, villagers waiting till the Forest Guard's back is turned to drive cattle into closed lands. The Divisional Forest Officer himself saw on several occasions villagers posted on the hill tops to watch the movements of the forest officials. Although there is an increase in the cattle impounded, this system must be carried out, otherwise the closing of forest blocks becomes a farce."

3.—CIVIL SUITS.

109. A suit was brought by one Gulam Mahomed valad Kaji Ahmed of Bhiwandi in the South Thána Division against this Department, claiming Rs. 149-6-0. The facts of the case are as follows :—Certain material from a departmental felling at Sazai in Murbád Range was sold for Rs 1,650 to Gulam Mahomed who assessed the value of the timber at Rs. 1,611 and the loppings at Rs. 39. Subsequently it was discovered that the loppings had already been sold by Sub-Assistant Conservator of Forests for Rs. 183. On this becoming known Gulam Mahomed agreed with the Divisional Forest Officer, Mr. S. Hornidge, to take the timber for Rs. 1,611 in preference to cancelling the sale. But notwithstanding this he filed a suit to recover the difference, with interest, between the price Rs. 183 at which the loppings had been actually sold and the value that he had assessed it at, *viz.*, Rs. 39. The defence of the suit was sanctioned by Government Resolution No. 6688, dated 1st October 1887, Revenue Department, and the case was heard before the Assistant Sessions Judge, Thána, who decided it in favour of this Department with all cost on 23rd December 1887.

110. Another suit was brought by one Dipchand Balkison against Mr. Waman Ramchandra Gaundé, Sub-Assistant Conservator of Forests, Poona, in the Small Cause Court of Poona, to recover the sum of Rs. 377, representing the damage done to some wood attached by Mr. Gaundé. The case was defended by Government under instructions given in Government Resolution No. 3240, dated 25th May 1887, Revenue Department, but the Judge of the Small Cause Court decided the case in favour of the plaintiff and against Mr. Gaundé personally and not against the Sub-Assistant Conservator in his capacity of a public servant. An application was made to the High Court as directed in Government Resolution No. 6939, dated 11th October 1887, Revenue Department, to set aside the decree of the Small Cause Court, and finally the High Court reversed the judgment and directed that the Small Cause Court had no jurisdiction to try the case.

4.—FOREST FIRES.

111. "Fire conservancy" is a very material factor in the maintenance and improvement of forests, and calls for special attention on the part of forest establishments. With a view to promote success in this work, the importance of which is being constantly and very correctly urged by the Government of India, and is obvious to any observant person who has moved much in the forests of this country, and to any one possessing a knowledge or experience of forestry in this country, both in the matter of the management of timbered forest-lands and also in the reboisement of denuded tracts, the Conservator of Forests issued a circular, during the year under report, to all the Divisional Forest Officers in the Northern Circle, which provides that upon the occurrence of a fire the Round Guard responsible shall at once assemble a "Panch" and submit a process showing—

(*a*) The name of the forest.
(*b*) Its area.
(*c*) The date of the fire.
(*d*) The area traversed by the fire.
(*e*) The damage done with its assessed value.
(*f*) The origin of the fire.
(*g*) Whether the offender was detected, and, if prosecuted against, with what result.
(*h*) The name of the Beat Guard in charge of the reserve and his statement.
(*i*) What steps were taken, if any, and by whom, to extinguish the fire.
(*j*) The Round Guard's own statement of his proceedings.

That the report should go to the Range Forest Officer who will transmit it with his remarks to the Sub-Assistant Conservator or the Divisional Forest Officer as the case may be, and the Divisional Forest Officer will eventually forward the papers to the Conservator with all the required particulars stated in English, and with a copy of his decision. It was directed that the punctual submission of "Fire reports" must be insisted upon by the Divisional Forest Officer, who should take severe notice of any delay, and more especially of any failure in reporting the visitation and circumstances of a forest fire.

112. The effect of these orders has undoubtedly been beneficial although no marked diminution may have been seen for the present in the number of forest fires, their spread however has decreased, showing that the forest subordinates have become more impressed by a sense of their responsibilities in the matter of fire conservancy, and are on the alert, and more vigilant in detecting fires, and prompter in action to suppress them. Government have in their Resolution No. 1942, dated 24th March 1888, issued orders to the effect that when the Collector of a district has satisfied himself that the burning of forest area in a village is due to the co-operation, connivance or gross negligence or indifference on the part of the village population as a whole, he should stop free grazing in Government forests for one year when more than one-third of the forest area may have been burned and for two years when more than half is burned. These orders will no doubt have a wholesome effect upon forest villagers in impelling them to be careful in the use of fire themselves, to see that outsiders do not fire the forests of their villages, to detect and communicate the cause of forest fires, to inform against people setting fire to forests, and to turn out at once and proceed to fight a fire without waiting to be called by a forest guard.

113. The following statement shows the forest areas in the different divisions of the Northern Circle, the portion which has been traversed by fire during the year, and the percentage the latter bears to the former :—

No.	Divisions.	Forest Acreage.	Acreage burned.	Percentage burned.
		Acres.	Acres.	
1	North Thána	3,73,993	19,848	5·2
2	South Thána	4,34,363	17,121	3·9
3	East Khándesh	5,07,513	16,247	3·2
4	West Khándesh	11,59,641	4,76,454	41·1
5	Násik	7,08,795	2,333	0·3
6	Ahmednagar	5,28,223	2,955	0·5
7	Poona	4,65,783	2,429	0·5
8	Sátára	4,25,343	993	0·2
9	Sholápur	1,73,379	1,393	0·8
10	Surat	6,20,286	27,029	4·3
11	Panch Mahals	2,04,790	39,494	19·2
	Total ...	56,02,109	6,06,276	10·8

114. In the North Thána Division the conservancy of the forests against fire has received considerable attention owing to the introduction of a more regular system of reporting forest fires under the orders of the Conservator of Forests. The Divisional Forest Officer, Mr. Wilkins, while suggesting measures for the prevention of forest fires recommends that :—

"It would be as well also if a rule were made under Section 25 (*i*) enabling the Divisional Forest Officer to close any forest that has been burnt, against 'Shikaring' for a season or so, for there is not a doubt that a very large number of the forests are annually fired by Shikáries to facilitate the driving and trapping of game."

With reference to this recommendation the acting Collector of Thána, Mr. H. E. Winter, while forwarding the report, writes as follows :—

"It seems possible at any rate in settled forest that a system of shooting permits might be introduced for persons having gun licenses with a view of checking incendiary fires, the persons holding such permits being required to see that the forests are not wilfully fired for purposes of shooting or trapping game."

115. In the South Thána Division also fire conservancy is improving; most of the reserves in all the ranges are protected by fire-paths 50 feet broad which are prepared by Beat guards and villagers.

116. In the East Khándesh Division there has been a marked decrease of forest-fires, while in the West Khándesh Division the area traversed by fire is larger than last year. The Divisional Forest Officer, Mr. Fagan, reports that nearly the whole of the "Reserved Forests" in the Sháháda, Shirpur, Taloda and Navápur ranges have been more or less completely traversed by fire, and until the villagers are punished under Government Resolution No. 1942, dated 24th March 1888, neither fires will decrease nor the offenders be detected.

117. In the Násik, Ahmednagar, Poona, Sátára and Sholápur Divisions there is a decided improvement in fire conservancy, and the areas traversed by fire are inconsiderable.

118. In the Surat and Panch Maháls Divisions no marked difference is apparent in the number of forest-fires, but it would seem that they are discovered almost immediately and that steps are taken at once to arrest their progress and to extinguish them.

119. On the whole fire conservancy has shown progressive improvement. No regular expenditure is incurred upon this work such as in the employment of special establishments entertained to protect the forests against fire as is the practice in other parts of India, but traces are burned by forest subordinates with the assistance of forest villagers, and sometimes, but very rarely, by employment of hired labour; as to special watchers none are entertained, for their numbers would necessarily be legion, for our forests are generally to be found in thickly populated districts where they intermingle in all directions with private lands; the reserves here are mostly narrow strips on the hill sides, or where grazing is so heavy that the danger of fires is minimised, extensive solid blocks of forests are to be found in the Sátpudas, in the Dángs, in the Mándvi Táluka of Surat and the moist country along the Sahyádri Range of Western Ghátş; these "ever-green forests" are rarely touched by fires. Where they can be of use fire-traces are burned, sometimes with the help of the wild tribes who enjoy privileges in the forests as contemplated by Section 78 of the Forest Act round the boundaries of the "Reserved Forests," and along the sides of roads and highways traversing the forests. Though forest-villagers often turn out readily when called upon to assist in putting out fires, and sometimes even do not wait to be called but go at once on seeing smoke rising up from the forest, still in parts of the country where privilege of taking dead wood for sale or barter has been conceded there are too many people interested in the occurrence and prevalence of forest-fires for fire conservancy to be as successful as it might otherwise be. However the proportion of forest burnt out of the area under fire protection is very small, more especially in the Deccan divisions, and this proportion will compare favourably with results obtained elsewhere under a complicated and extensive system of fire tracing, showing that nothing is to be gained by changing our present orders of battle. More elaborate schemes of fire traces to correspond with the outer boundary lines and the internal sub-divisional lines of forests may, if found to be desirable, be introduced hereafter concurrently with the extension of working-plans schemes. But it must be admitted always that in the industry and vigilance of the permanent forest protective staff, supplemented by the active co-operation of forest-villagers, will be found the main lines for a successful battle against forest-fires in the Northern Circle.

120. The expenditure upon "fire-conservancy" for the year in the payment of hired labour and of rewards to villagers for extinguishing fires has in eleven divisions aggregated Rs. 493-3-6 only.

121. It is always difficult to prove that fire-conservancy can do any good and has had any appreciable effect beyond the improvement of the young timber and of vegetation generally in the forests protected against fires; but there is a remarkable circumstance in the Khándesh District which has attracted the notice of Land Revenue Officers, and of the people of the locality, and which in the Conservator's opinion owes its creation entirely to improved forest-conservancy,

mainly in protection against fires. A general rise of the water level has been observed in the Sávda and Chopda tálukás upon the north bank of the Tápti river. The whole of the uplands comprising the Sátpuda hills which drain upon the cultivated lands of the Sávda and Chopda tálukas are included in "Reserved Forests" the boundaries of which come well down to the base contour lines. Thus the forests constitute high level natural reservoir located much above and commanding the entire champaign country between them and the great river, the Tápti, which is the main drain in this part. Forest conservancy against indiscriminate fellings, against over-powering grazing, against fires, has changed the complexion of the Sátpudas, the forest growth has become more dense, the natural re-production of the trees much more active and vigorous, the grass in still open savannahs, which are fast disappearing, is forming a thick felt under foot owing to the root-stocks meeting under ground; and owing to these causes the water storage power of the Sátpudas has increased very greatly of late years, and will increase more. As the general line of drainage is from east to west, the rise of the water level in the plains has shown itself first at the upper or eastern side where the forests are broader.

5.—GRAZING AND FODDER GRASS.

122. The grass and grazing revenues of the forests of the Northern Circle during the year exhibit an increase of Rs. 11,729 over that of the last year, and thus they have maintained the marked feature of steady increase which has appeared under this head since 1878, *i. e.*, the year of the famine. The following figures will show the revenue from this source for the last ten years:—

	Rs.
1878-79	42,629
1879-80	64,613
1880-81	1,00,443
1881-82	1,41,765
1882-83	1,64,444
1883-84	1,97,963
1884-85	2,25,853
1885-86	2,32,650
1886-87	2,37,126
1887-88	2,48,855

123. The actuals of the several divisions of the Northern Circle compare as under with the figures of the previous year:—

No.	Division.	1886-87. Rs.	a.	p.	1887-88. Rs.	a.	p.
1	North Thána	9,978	8	0	10,969	11	0
2	South Thána	2,316	5	8	4,453	3	0
3	East Khándesh	26,953	7	6	34,858	13	2
4	West Khándesh	33,411	0	0	43,302	11	0
5	Násik	37,831	5	0	36,370	7	4
6	Ahmednagar	27,199	12	11	28,626	11	7
7	Poona	47,707	11	9	38,381	15	3
8	Sátára	37,156	8	0	35,111	0	9
9	Sholápur...	5,732	2	9	10,534	13	11
10	Surat	1,274	15	0	924	4	6
11	Panch Mahals	7,564	1	0	5,321	7	0
	Total ...	2,37,125	13	7	2,48,855	2	6

124. In the Poona Division the grass of some of the best grass-producing Reserved Forests is placed at the disposal of the Commissariat Department for their contractors to cut and remove. A very large acreage has been applied for by the Commissariat officers and has been assigned to them this year, the grass of which is capable of feeding a multitude of animals; the value of this grass for which no credit is received in the forest accounts, amounts to Rs. 25,000. The Commissariat contractor is required to deliver wherever the Commissariat Department may require a stated weight of grass, and all the grass over and

above this measure exploitable from the "Reserved Forests" in question becomes the property of the contractor. It is possible that under this arrangement the Commissariat Department may obtain grass at a comparatively low rate and that the Commissariat contractor's profits may be considerable, and at the same time it is not improbable that the grass-revenue given up by Government may exceed the value of their gain over what would be the cost of grass obtained in the open market.

125. In the Konkan Forest Divisions of North and South Thána where the rainfall is heavy and the growth of grass vigorous, very little restriction is placed upon the grazing of cattle in the forests pending the introduction of a system of grazing on payment of fees; free grazing is permitted over all the forests excepting certain small areas where timber fellings have recently been made or where planting works are in progress, to forest and non-forest villagers alike, without restriction. A small revenue is made by the auction sale of the grass from the old "Kurans," tracts preserved for the sale annually of the right of grass cutting and appropriation, or of grazing, and from forest plantations for cutting and removal. The revenue realised from this source in these two divisions during the year has exceeded the figures of last year as will be seen from the statement given above.

126. In the Deccan Forest Divisions forest conservancy has had a marked effect upon the improvement in quality of grass and has largely increased its production. To promote the growth of grass in abundance it is necessary to secure moisture in the soil, and this is effected by restoring superior vegetation to the reserved areas, for if the rain water runs off the mountain and hill sides as fast as it falls upon them, carrying away with it soil and other matter, it is hopeless to expect a good crop of grass to appear. It is likewise necessary to allow grass to seed and also to reproduce by the spreading of roots and the growth of shoots from them. If cattle are permitted into the open forests in overwhelming numbers, and if they are let in when the new grass has commenced to grow, it is obvious that very little, if any, improvement can be looked for; the grass will be eaten down as fast as it comes up, and its roots will be plucked up from the ground while the soil saturated with rain water has no very binding hold upon them, and hoofs of thousands of animals trample out of existence the grass upon sodden earth which escapes their mouths.

127. It is of primary importance to distinguish between the grazing of ovine animals (sheep and goats) and that of bovine species (cows, oxen, &c.). The former is one of the most powerful causes of the destruction of grazing in forests, sheep and goats being exceedingly close-feeders. The teeth of goats are especially poisonous to ligneous vegetation, and the grazing by sheep in large flocks upon soil already deteriorating, most rapidly accelerates denudation. Hundreds of sharp split hoofs pounding on the same limited surface cut up the ground and every thing upon it, and the animals seize the root-stocks of the grass with their teeth and pull the entire plant out of the ground. It is absolutely certain that the growth of grass of good quality is entirely incompatible with sheep and goat grazing. To prove this statement the Conservator would state that during the year under report sheep and goats were allowed to graze in certain forest-lands in the Poona District where only horned cattle generally graze, and the result has been a number of petitions protesting that the sheep have fouled and destroyed the pasturage so as to make it useless for cattle. Again the Village Officers of Sawantsar in the Kopargaon Táluka of the Ahmednagar District complained bitterly to the Conservator, when they accompanied him into the reserve of that village, of the utter destruction of the pasturage of their cattle effected by sheep; they also pointed out to him the perfectly bare ground in the month of December and said, "sheep have done this; they have uprooted all the grass and have deprived our cattle of grazing."

128. All the Divisional Forest Officers in the Northern Circle hold similar views as stated above regarding sheep and goat grazing, not only as a consequence of their technical education in forestry at forest schools in Europe, but also of their observation and experience in the management of forest divisions in this Circle. The Director of Agriculture of the Bombay Presidency, in his Administration Report printed and puplished, and also in a separate report to Government addressed by him during the year of this report, raised the question

of the Forest Department "going too far" as regards the rigorous exclusion of sheep and goats from their reserves. However, as a matter of fact, a very large percentage of the forest area in all divisions is open to the grazing of sheep and goats. The open reserves in Khándesh are overrun by these animals. In the Násik District they are allowed into the open blocks of the forests of all the ranges but two where the forest area is small. In the Ahmednagar Division all the reserves of Ráhuri and a great part of Párner and thousands of acres in other tálukás are opened to sheep, and in the same way in the Poona, Sátára, and Sholápur divisions sheep are not excluded from all the compartments of forest blocks which are open to cattle. The Conservator cannot name a division where the rigorous exclusion of sheep is practised, and at the same time he is convinced that their admission into forests, save where trees cover the ground and are "defensable" against such grazing, is decidedly detrimental both to forestry and to the production of good and abundant grass. The effects of sheep-grazing observed upon a model farm where stall-fed animals are allowed to graze for a few hours daily under professional care and regulation upon lands subject to artificial irrigation cannot be taken as a correct basis for determining whether sheep-grazing is harmful or not to forests and forestry where all the conditions are totally different; and a proposal to manage whole districts on the basis of a more or less successful result occurring upon a small area of exceptional lands with exceptional animals, under exceptional conditions of treatment will not bear serious consideration, for wide experience of sheep-grazing upon the denuded and semi-denuded water-sheds and hills of the Deccan has fully confirmed the statement of that famous French Forest Officer, Monsieur Boppe, that sheep are *l'ennemi hereditaire* of the Forest Officer.

129. Grass and grazing arrangements in the Northern Circle are regulated by the orders of Government contained in their Resolution No. 7467, dated 15th September 1885, Revenue Department. The fee system of grazing is being introduced in almost all the divisions of the Northern Circle, and if it were to be strictly enforced, and no free grazing were to be allowed, the revenue derived from grazing would expand very considerably, the number of cattle in the Northern Circle being enormous as the, following statement of cattle in the several Collectorates during the year 1887 will show :—

No.	Collectorate.	Oxen.	Cows.	Calves.	Asses.	Camels.	Mules	He-Buffaloes.	She-Buffaloes.	Buffaloe Calves.	Sheep.	Goats.	Horses and Ponies.	Total.	Remarks.
1	Thána	1,39,695	1,09,556	94,296	125	...	...	46,589	22,799	17,705	2,959	36,644	1,265	4,71,633	
2	Khándesh	3,65,416	3,31,676	32,477	7,787	2	6	6,431	1,46,396	8,511	*1,66,120		20,109	10,84,931	*Sheep and goats have not been shown separately in the statements received from the Collector and therefore they are shown common in these two columns.
3	Násik	2,23,130	2,75,276	...	2,243	...	...	26,159	48,466	...	1,30,959	1,03,621	14,057	8,23,911	
4	Ahmednagar ...	3,06,478	2,00,116	1,41,137	5,219	...	...	8,667	37,036	20,441	3,22,389	1,27,151	25,211	11,93,845	
5	Poona	2,78,386	2,49,382	...	4,290	...	...	10,523	71,600	...	*3,47,507		14,129	9,75,767	
6	Sátára	2,58,976	2,10,882	...	...	...	...	1,17,367	30,884	...	*4,61,137		15,450	10,94,696	
7	Sholápur	1,96,477	1,79,921	...	2,832	...	...	15,665	60,810	...	*3,54,514		12,388	8,22,607	
8	Surat	1,13,497	63,874	75,620	...	...	...	5,172	44,511	32,345	32,297	60,094	...	4,27,410	
9	Panch Mahális ...	83,896	65,378	55,885	1,000	20	...	595	22,171	11,612	5,623	25,381	2,655	2,74,216	
10	Ahmedabad ...	1,52,163	89,053	43,529	....	...	...	2,191	94,883	37,867	*81,792		5,949	5,07,427	
11	Kaira	1,21,907	39,185	34,344	4,703	139	...	541	1,03,903	60,732	32,655	5,256	1,982	4,05,437	
12	Broach	89,254	11,438	16,125	1,137	74	...	173	29,944	18,843	13,342	21,699	2,377	1,74,406	
	Total ...	22,99,315	18,25,737	4,93,413	29,336	235	6	2,40,073	7,13,403	2,08,056	5,40,224	3,79,846	1,15,572	82,56,286	
											14,11,070				

6.—FENCING.

130. The fencing of forest reserves in the plains and elsewhere with wire and living vegetation is a work involving considerable outlay, and as other and

more immediately important works of improvement and management of forests, such as the demarcation of forest boundary upon the ground by the erection of boundary-marks and the consolidation of forest reserves, &c., are in progress, no great expenditure was incurred upon fencing operations. Fences of simple unarmed wire will not keep out cattle as is often demonstrated in wire-fenced plantations, for cattle learn to dodge between the wires as if they had been in training all their lives to run in obstacle races. However in four divisions of the Northern Circle some fencing was undertaken, the details of which are as under.

North Thána, a living fence of Euphorbia extending over nearly 2 miles at a cost of Rs. 12-8 and wire fencing $1\frac{3}{4}$ miles long at a cost of Rs. 126-9-3 were erected in the Sálsette Range; and the fencing of the Sophalla plantation was repaired at a cost of Rs. 36-13-3.

In the Ahmednagar Division 56,102 running feet of forest boundaries were fenced with prickly-pear, and 4,500 bámbus were planted at intervals upon forest boundaries by Beat Guards in different ranges.

The Sátára Division has seen 43,290 feet of aloe, *Agane Americana*, fencing planted at a cost of Rs. 155-7-9 under the direction of forest subordinates.

In the Sholápur Division the total length of fencing established was 13,100 feet, the material used being "sher," *Opuntia tirucalli*, in the Pandé reserve, and prickly-pear in the Karmála and Patheri reserves; the cost incurred amounted to Rs. 66-8.

7.—NATURAL RE-PRODUCTION.

131. The forcing climate and heavy rainfall of the Konkan conduce to a very vigorous natural reproduction of vegetable life in the Thána Divisions, but the abounding crops of seedlings of all kinds which appear in the forests cannot develop and gradually fill up the blanks as they are much injured by cattle and by fire, the great enemy of young plants. Both the Divisional Forest Officers of North and South Thána report that natural reproduction is good everywhere, that coppice shoots soon cover the stools of felled trees, growing rapidly and strongly.

132. In the Deccan Divisions of the Northern Circle marked improvement has taken place in the natural spread of seedlings, although cattle, including sheep, the hereditary enemy of the Forest Officer, with their attendant goats which have been entered for grazing in large numbers, either free or on payment of fees, on forest-lands, a great portion entirely indefensable against such grazing, have retarded reboisement and the natural development of forests very materially. The Director of Agriculture has urged in the report, already referred to, made by him to Government, that "*sheep will not graze unless led by goats.*" This phenominal characteristic of the Western India sheep, if the observation of the Agricultural Department is conclusive on the point, heightens the objection of admitting sheep into forest-lands under reboisement, because it follows that where they go there goats must be admitted also; at all events it is a well-known fact that the Western Indian shepherd to save himself trouble attaches a number of goats to his flock of sheep, because goats being the more intelligent animals can be driven easily and where they lead sheep will follow, while to drive a flock of sheep alone in a desired direction is a work of no ordinary difficulty.

133. The Divisional Forest Officer, Poona, reports thus of one case of natural reproduction capable of proof which has come before him during the year:—

"In the Bamburda reserve of the Mulshi Range a rock is shown from off which 10 years ago a gentleman shot two bears. In March last standing on this stone I could not see five yards in any direction, so thick was the young growth of ain, &c."

134. On the whole "natural reproduction" in the Northern Circle has continued its course of progressive improvement where protection has been effective. And a very remarkable change is spreading over the face of the country which is included within the operations of the Forest Department: after an absence of

seven or eight years from the place the Conservator re-visited this season the higher slopes of the Patna reserve about the Outram Ghát in the Chálisgaon Range of the Khándesh District and he was surprised to see the improvement the forests had made, seedling trees of teak, blackwood and other valuable timbers are to be seen with clean straight stems intermixed with bámbus, &c., covering ground that was very much bare before. The Sátpuda forests of Khándesh, despite the unfriendly action of the Code of Privileges, have come on wonderfully in parts of the Sávda and Chopda tálukas; and the Sámbhar and other wild animals have returned to the haunts of their ancestors from whence the latter had been banished for years by the desolating axe and the supplementary jungle fires.

8.—ARTIFICIAL RE-PRODUCTION.

135. Under the bountiful provisions of nature, natural re-production is the Forest Officer's mainstay for re-stocking his reserves in this country; but artificial plantations are required to be made in respect of considerable tracts of denuded lands which are required to be stocked with growing timber as soon as possible and which for one cause or another cannot be effected by other means as quickly and as satisfactorily as desired, also when the introduction or multiplication of certain kinds of trees are wanted to the exclusion of other kinds, &c. The usual systems of artificial plantations, *viz.*, of raising seedlings in nurseries, of irrigated plantations, of ploughing the ground, dibbling, and broadcasting, were followed during the year in all the divisions of the Northern Circle; and the results have been as profitable as could be expected.

136. The results of artificial re-production are to a very great extent, if not entirely, dependent upon the treatment the lands are subjected to. When forest reserves are thrown open to cattle on the occurrence of a partial drought or because there has been some delay in the arrival of the monsoon rains, it can only be expected that the reboisement of such lands will, if not checked entirely, at least be retarded by plant life being trodden out of existence. In order to secure plant life against cattle and fire, a sufficient number of forest guards is essentially necessary. However with the staff in hand the Forest Department in the Northern Circle has made good progress towards re-clothing denuded hills, &c.

137. In the North Thána Division large collections of seeds were made by forest guards, and blanks inside Reserved Forests were sown broad-cast in every range, seeds were dibbled over some patches, and in some cases seedlings were transplanted from afforested areas into bare areas; thus in Dáhánu Range 4,600 seedlings of various kinds were transplanted; in Máhím 5,310, in Váda 3,200, in Bassein 1,800 and in Sálsette 2,590 were transplanted by forest guards.

138. In the South Thána Division 45 khandies of different kinds of seeds were collected by Beat Guards and were sown in blank spaces and in places where natural reproduction was backwards.

139. In the two Khándesh and Násik Divisions the systems resorted to were of ploughing, dibbling and broad-casting; and the results are reported to be satisfactory.

140. In the Ahmednagar Division an establishment of three Mális was in entertainment during the year for rearing plants in nurseries. Two dams were erected in the Nagar Range across the "Happy Valley" at a cost of Rs. 164-7-0 for irrigation purposes, and Rs. 64-2-4 were expended in repairing and lengthening their distributary canals. A total area of 756 acres was brought under artificial plantation at a total cost of Rs. 572, and broad-cast sowings were undertaken by Beat Guards, 132 khandies of different kinds of seeds having been sown in 29,861 acres of land and 13,805 young plants were also transplanted by Beat Guards.

141. In the Poona Division 520 acres were ploughed and sown by hired labour at a cost of Rs. 235-6-3 and the forest guards prepared 51,710 pits and sowed seeds in them. In the Sátára Division 378 acres of fresh ground were

planted by hired labour at a cost of Rs. 936, and broad-cast sowings of different kinds of seeds were made in 19,594 acres by forest guards.

142. In the Sholápur Division 1,008 acres were planted by hired labour under the systems of full ploughing, furrow-ploughing and dibbling at a cost of Rs. 1,247-11-9, and the cost of carriage of seeds, &c., amounted to Rs. 416-5-11. In the two Gujarát Divisions no extensive plantations were undertaken. In the Surat Division 1,057 acres were planted at a cost of Rs. 36-3-1, or about 6 pies per acre, and 148 acres were planted in Panch Mahals by forest guards.

9.—EARLY THINNINGS, REMOVAL OF INFERIOR SPECIES, CUTTING OF CREEPERS, &c.

143. This work is carried out by forest guards generally in the Northern Circle. The eradication and removal of prickly-pear, *Opuntia dillenii*, which forms one of the chief obstructions to the growth of ligneous vegetation in the Reserved Forests in the champaign country, is also undertaken by forest guards when the growth is young and in small quantities; but in some of the reserves where the prickly-pear is of considerable age and has extended greatly, it becomes necessary to utilise hired labour for its extraction, and thus in the Ahmednagar Division an expenditure of Rs. 103-7-0 was incurred upon this work, of Rs. 384-10-2 in the Poona Division, and of Rs. 179-10-0 in the Sátára Division. Forest guards are required to cut creepers and climbers in the forests of their beats; but the day has not arrived yet when the guards can be employed to undertake more scientific operations in the removal of inferior species in view of the improvement to be given thereby to the forests.

10.—EXPERIMENTS WITH EXOTIC TREES.

144. There is nothing interesting to record under this head. Some of the Divi-divi, Carob, *Pithecolobium saman*, and varieties of Eucalypti, &c., which have established themselves in years past are growing well. The Divisional Forest Officer, Ahmednagar, reports that the seeds of several kinds of Eucalyptus and other Tasmanian trees, which were supplied to him by the Conservator, were sown in pots in the Dongargaon nursery and elsewhere, but the result was not satisfactory, very few of the seeds having germinated. The Divisional Forest Officer, Násik, reports that the young Mahogany plants that were sown last year are doing well and have attained a height of 2½ feet. The total expenditure of the Circle under A. *VIII. d.* "Plantations" during the year amounts to Rs. 6,696-3-9.

145. The introduction into this country of foreign trees which possess important properties in commercial, medicinal and sanitary points of view, and can be acclimatised, is no doubt to be urged very strongly in the light of the advantages they will confer, but on the other hand it should not be forgotten that the Flora of this country contains very many beautiful and highly provident trees, which are not sufficiently known to the world; and the cultivation and commercial development of such trees should command greater attention than has yet been given to them. The term "inferior trees" is often applied recklessly and in great ignorance; one has only to read a list of "reserved trees" and to consider the names and properties of the unprotected to appreciate this; the system of prescribing an unreserved class of so called "inferior trees," which may be destroyed at the caprice of villagers, is to be condemned in the strongest manner possible, not only is it entirely incompatible with correct forestry to do so in connection with a "Reserved Forest," but it conduces often to the killing of the goose that can lay the golden eggs. Exotics may be very beautiful and very valuable, but they cannot surpass in beauty the trees of the country which probably may not yield to them in any respect in value. The property of the Eucalyptus in overcoming malaria has been very justly eulogized; but very little is known of the virtue of the Indian Jambul in this respect, although it is a well known fact among the Syhádri mountaineers that where the Jambul predominates in the forests of the Western Ghats jungle fever is unknown, and on the other hand where the tree is not of frequent occurrence but is rare, there is the home of jungle fevers. There are trees the bark of which is valuable in the manufacture of paper; there is the lance-wood tree, the satin-wood tree, the

tree the wood of which makes cart axles, the tree the wood of which makes poles for carriages, Tongas, &c., the very humble shrub, the Tarvad, also the Dhaiti, *Woodfordia floribunda*, and many other members of the Vegetable Kingdom of high economic value appearing often in the death-roll of "inferior trees," because the people who compile such lists have no sufficient knowledge on the subject, and probably also in justification of the adage that a prophet has little honour in his own country.

11.—COMMUNICATIONS AND BUILDINGS.

(*a*).—Roads and Bridges.

146. In the North Thána Division considerable progress has been made in the construction of the Shirghát-Paruli road as sanctioned by Government in their Resolution No. 31 C.W.—69, dated 16th December 1887, in the Public Works Department. The road is to be 16 feet wide and is estimated to cost Rs. 63,000, or at the rate of 3,000 a mile, and to be constructed from Provincial Funds. As regards this road the Superintending Engineer writes:—

"This line passes through the heart of very valuable British forests which it will tap and open out in both directions, *viz.*, to the Deccan and the sea. It must be explained that this road does not stop at the foot of the Shirghat leaving a costly ghát road to be constructed before it will be useful, but is in iself the ghát road and will open communication at once with the Deccan near Trimback and Násik and provide a most valuable market for forest produce."

147. Government in their Resolution No. 554 C.W.—1493, dated 27th September 1887, in the Public Works Department, have sanctioned the survey of roads over the Naniwli, Medwan and Jaishet Khinds in the Máhím Range, and from Yeur to Chené and Ghodbandar in the Sálsette Range; and the road leading through the Satiwli Khind in the Bassein Range, sanctioned under Government Resolution No. 536 C.W.—1561, dated 21st September 1886, was opened for traffic during the year and was much used.

148. The roads leading up to Tungar hill and the forest bungalow at Parol in the Bassein Range were put into repairs at a cost of Rs. 25-11-0 during the year.

149. In the South Thána Division the construction of road over the Málsej Ghát has been undertaken by the Public Works Department for years, but the cost having been found to be very considerable, the work has been discontinued. This road, if eventually constructed, will open out the forests of the Murbád Range very considerably.

150. A road under construction in the Mokháda Petha by the Public Works Department from Suryamal to Shirghát progressed during the year, but is not yet available for traffic.

151. The Jávli-Baleshwar forest road in the Ahmednagar Division was repaired during the year at a cost of Rs. 49-15-0.

152. In the Surat Division Rs. 345-4-8 were spent during the year in repairing the Dáng road.

153. In all other divisions of the Northern Circle, where special works of constructing roads have not been undertaken, there are several main roads running through the divisions which are maintained from Imperial funds; there are also other subsidiary roads connecting the táluka towns, &c., the up-keep of which is borne by local funds. These roads open out forests connecting them to markets.

(*b*).—Buildings.

154. In the North Thána Division the walls and ceiling of the forest bungalow at Parol were repaired at a cost of Rs. 272-10-9, and under sanction conveyed in Government Resolution No. 480 C.W.—1282, dated 16th August 1887, in the Public Works Department, a forest depôt-house was constructed during the year at Mánikpur in the Bassein Range at a cost of Rs. 603. Two new forest-posts were built and the old ones repaired at a total cost of Rs. 421-12-0.

155. A sum of Rs. 370 was spent in the South Thána Division in the erection of 37 forest-posts, and Rs. 26-10-0 for temporary náka shêds.

156. No new works were undertaken in the East Khándesh Division beyond repairs to depôt-houses. The expenditure under this head amounted to Rs. 176-14-0.

157. In the West Khándesh Division 20 forest guards' huts were built at a cost of Rs. 300, and a depôt-house at Sángvi at a cost of Rs. 44-14-0, and Rs. 145-8-0 were spent on repairs to depôt-houses in different ranges.

158. In the Násik Division an office for the Range Forest Officer, Peint, and a new outhouse for the Divisional Forest Officer's bungalow were completed during the year.

159. In the Ahmednagar Division the work of building three forest stations at Ghatghar, Singanwadi and Phopsandi respectively was undertaken as sanctioned in Government Resolution No. 713-C. W.—2018, dated 15th December 1887, Public Works Department, but was not completed by the close of the year.

160. In the Poona Division the Range Forest Officers of Khed and Mulshi were furnished with new office accommodation at a cost of Rs. 1,690 and Rs. 1,550 respectively, and the Sub-Judge's Court at Pátas was handed over to the Forest Department for being used as an office-room for the Sub-Assistant Conservator of Forests and the Range Forest Officer, Bhimthadi.

161. In the Sátára, Sholápur and Surat Divisions no new works were undertaken; repairs were made to náka-houses, &c. The construction of forest guards' huts in the Panch Maháls Division cost Rs. 478-12-0.

162. The following statement will show the number of ranges provided with offices in connection with Mámlatdárs' Kacheries and those remaining to be provided at the close of the year:—

No.	Divisions.	Number of Ranges.	Ranges provided with Offices.	Ranges remaining to be provided.
1	North Thána	6	6	...
2	South Thána	8	8	...
3	East Khándesh	13	8	5
4	West Khándesh	10	3	7
5	Násik	14	6	8
6	Ahmednagar	11	8	3
7	Poona	11	6	5
8	Sátára	14	10	4
9	Sholápur	7	4	3
10	Surat	6	2	4
11	Panch Maháls	5	5	...
	Total ...	105	66	39

163. The expenditure upon communications and buildings charged in the forest accounts during the year amounted to Rs. 4,155-2-6.

CHAPTER IV.

YIELD AND WORKING.

1.—DEPARTMENTAL OPERATIONS.

(*a*).—TIMBER AND (*b*).—FIREWOOD.

North Thána Division.

164. The result of the sales of timber sold in lump, the produce of each forest separately, by auction or tender for trade appear thus :—

No.	Range.	Number of "Coupes"	Yield.		Cost.			Receipts.			Remarks.
			Number of Pieces.	Firewood Carts.	Rs.	a.	p.	Rs.	a.	p.	
1	Sálsette	5	4,078	3,202	1,811	15	3	5,866	5	0	
2	Bassien	8	8,645	5,344	3,787	2	3	11,699	4	0	
3	Máhím	11	21,167	4,815	3,436	6	8	13,278	2	0	
4	Váda	2	5,267	642	734	5	1	2,644	0	0	
5	Dáhánu	2	6,918	1,002	842	2	3	4,196	1	9	
6	Umbargaon ...	4	3,628	408	695	9	9	6,123	12	0	
	Total ...	32	49,703	15,413	11,307	9	3	43,807	8	9	

The foregoing statement includes 5,670 cart-loads of firewood consisting of branches, loppings and stumps of the timber sold at 8 annas per cart to villagers for household comsumption.

165. The following material felled in the several ranges was sold by auction sale in small lots to serve the convenience and purchasing capacity of villagers and men of small means :—

No.	Range.	Timber Pieces.	Receipts.			Remarks.
			Rs.	a.	p.	
1	Slásette	1,096	2,485	5	0	
2	Bassein	5,178	5,497	4	0	
3	Váda	...	.....			
4	Máhím	9,479	5,082	10	0	
5	Dáhánu	4,250	2,278	12	0	
6	Umbargaon	3,628	5,817	12	0	
	Total ...	23,631	21,161	11	0	

In addition to the foregoing, special fellings were made to supply the wants of the sugar-boilers in the Bassein Range, and 1,299 large and 1,088 small carts, representing about 3,686 khandies of firewood, at rates varying from Rs. 2 to annas 12 per cart. according to the class of material, were disposed of. Th total revenue from this source amounted to Rs. 3,082-8-0.

South Thána Division.

166. In this Division two classses of departmental fellings were undertaken :—

(*a*) The fellings of lots of 2,000 trees each marked for the axe in different forests of the five ranges, and

(*b*) The exploitation of "coupes" laid out by the Working Plans branch in the Kalyán and Bhiwndi Ranges.

The following table gives the results of the operations :—

(*a*).

No.	Range.	Number of Trees.	Cost.	Receipts.	Remarks.
			Rs.	Rs.	
1	Sháhápur	4,000	690	4,325	
2	Khardi	4,000	650	3,325	
3	Murbád	4,000	552	2,825	
4	Karjat	4,000	664	3,700	
5	Khálápur	4,000	735	3,567	
	Total ...	20,000	3,291	17,742	

(*b*).

No.	Range.	Area in Acres.	Cost.	Receipts.	Remarks.
			Rs.	Rs.	
1	Bhiwndi	78	750	4,260	
2	Kalyán	97½	477	2,598	
	Total ...	175½	1,227	6,858	

The sales were effected by auction, both ratail and wholesale, in order that small traders and purchasers might have the opportunity of providing themselves with the timber they required direct.

No material was felled departmentally in the Mokháda Range.

The branches and stumps of the trees thus felled departmentally representing 1,205 khandies of firewood and 1,735 khandies of small blocks useful for making cart-wheels when sound, otherwise for firewood, realised, when sold, Rs. 2,211.

East Khándesh Division.

167. The departmental timber felling operations in this division were as under :—

No.	Range.	Number of Trees.	Yield. Number of pieces.	Cost.	Receipts.	Remarks.
				Rs. a. p.	Rs. a. p.	
1	Bhusával	878	570	71 8 0	600 0 0	Bábul.
2	Chopda	1,528	10,000	350 0 0	3,819 5 0	Teak.
3	Jamner	11,560	12,230	397 7 0	3,442 13 0	
4	Ráver	900	1,000	39 6 0	142 0 0	Anjan.
5	Yával	2,875	7,500	87 6 0	2,852 0 0	Teak.
	Total ...	17,741	31,300	945 11 0	10,856 2 0	

The result of the year under report appears to be more satisfactory than of the last year.

The following were the firewood operations :—

No.	Range	Yield.	Cost.	Receipts.	Remarks.
		Khandies.	Rs. a. p.	Rs. a. p.	
1	Amalner	92	26 0 0	95 0 0	
2	Bhadgaon	3	2 0 0	2 11 0	
3	Bhusával	573	468 15 0	594 1 0	
4	Jámner	500	156 4 0	372 15 0	
5	Edalabad	3,000	937 8 0	3,180 0 0	
6	Jalgaon	167	36 6 0	246 0 0	
7	Ráver...	1,000	300 0 0	702 0 0	
8	Sávda...	750	234 6 0	377 0 0	
	Total ...	6,085	2,161 7 0	5,569 11 0	

The result here, when compared with that of the last year, is also more favourable.

West Khándesh Division.

168. The timber felling operations consisted only of teak and were as under :—

No.	Range.	Number of Trees.	Number of Pieces.	Cost.	Receipts.	Remarks.
				Rs. a. p.	Rs. a. p.	
1	Nandurbár	3,216	9,989	300 0 0	4,723 12 0	
2	Navápur	1,142	22,294	758 10 0	7,000 0 0	
3	Pimpalner	1,187	6,917	400 0 0	2,325 0 0	
4	Shirpur	3,844	11,333	416 0 0	4,290 10 0	
5	Sháháda	1,616	7,092	489 9 6	2,568 0 0	
6	Taloda	2,420	10,189	668 10 0	2,353 14 0	
	Total ...	13,425	67,814	3,032 13 6	23,261 4 0	

In addition to the above 2,714 peices were on hand from last year, which were sold for Rs. 47-4-0. Thus the total revenue under I (*a*) came to Rs. 23,308-8-0.

The firewood fellings, consisting of Khair, Anjan and Bábul, were as follows :—

No.	Range.	Number of Trees.	Yield.	Cost.	Receipts.	Remarks.
			Khandies	Rs. a. p.	Rs. a. p.	
1	Dhulia	9,035	2,300	577 0 0	2,250 0 0	
2	Nizámpur	1,608	1,675	382 7 0	875 0 0	
3	Shírpur	66	6	1 14 0	2 10 0	
4	Sindkhed	100	85	20 5 6	85 0 0	
	Total ...	10,809	4,066	981 10 6	3,212 10 0	

There were 1,024 khandies on hand from last year, and part of it was sold for Rs. 791-4-0, hence the total receipts for firewood amounted to Rs. 4,003-14-0.

Departmental fuel outside of the Dhulia and Sindkheda Ranges commands no market at all, owing to the privilege-holders underselling the Department, and the experience gained during the past has taught that the main fellings of firewood in future years should be confined to the Dhulia Range alone.

Násik Division.

169. The felling operations gave the following results :—

No.	Range.	Yield.		Cost.			Receipts.			Remarks.
		Logs.	Firewood.							
			Khandies.	Rs.	a.	p.	Rs.	a.	p.	
1	Násik	30	1,000	274	12	0	791	0	0	
2	Igatpuri	8,876	127½	560	10	6	2,507	10	0	
3	Sinnar	2,323	75	105	5	0	955	13	0	
4	Dindori	43,922	525	1,930	4	5	10,044	15	0	
5	Niphád	...	237½	73	12	0	141	4	0	
6	Chándor	2,507	...	66	11	0	1,469	3	0	
7	Yeola	...	...	2	0	0	.....			
8	Kalvan	24,125	328	349	15	0	3,989	14	0	
9	Báglán	7,581	2	200	7	0	2,432	9	0	
10	Peint	*60,075	*3,149	.....			†1,805	0	0	* Not sold.
11	Nándgaon ...	...	500	137	7	0	815	0	0	† On account of the sale of last year's rafters only.
12	Málegaon ...	1,540	1,010	252	8	0	797	12	0	
	Total ...	1,50,979	3,805	3,948	11	0	27,750	0	0	

Ahmednagar Division.

170. Teak fellings were made in Akola and Sangamner Ranges according to the working plans, and jambul fellings were also made in the beds, channels of rivers and streams :—

No.	Range.	Number of Trees.	Yield.		Cost.			Receipts.			Remarks.
			Timber Rafters.	Firewood.							
	Teak.			K. m. lbs.	Rs.	a.	p.	Rs.	a.	p.	
1	Akola	11,572	31,842	327 22 0	671	1	6	5,658	5	7	
2	Sangamner	7,740	20,304	259 1 3	485	15	0	2,731	11	6	
	Total ...	19,312	52,146	586 23 3	1,157	0	6	8,390	1	1	
	Jámbul.										
1	Akola	3,856	10,422	355 23 25	205	13	3	500	2	0	
2	Sangamner	2,091	4,786	169 0 3	98	1	6	287	8	3	
	Total ...	5,947	15,208	524 24 0	303	14	9	787	10	3	
	Grand Total ...	25,259	67,354	1,111 19 3	1,460	15	3	9,177	11	4	

The above statement includes 1,016 first, second and third class rafters supplied to the Public Works Department. There were 3,741 teak and 4,575 jambul rafters on hand from previous years, out of which 649 teak and 352 jambul rafters were carried away by floods. The balance was sold by auction. The receipts for the timber felled during the year under report were Rs. 8,390-1-1 and Rs. 787-10-3 respectively for teak and jambul, the average cost of felling teak rafters per 100 being Rs. 2-3-0 and jambul Rs. 1-15-0 and the average receipts coming to Rs. 16-2-0 for teak and Rs. 5-3-0 for jambul per 100 rafters.

The departmental firewood operations are as under:—

No.	Range.	Number of Trees.	Yield.			Cost.			Receipts.			Remarks.
			K.	m.	lbs.	Rs.	a.	p.	Rs.	a.	p.	
1	Nagar...	200	91	1	13	29	13	0	186	12	0	
2	Shrígonda.	63	151	9	5	23	14	6	279	5	0	
3	Shevgaon	35	84	14	0	18	4	6	100	7	0	
4	Nevása	38	22	9	0	5	0	0	45	0	0	
5	Kopargaon	229	419	13	0	100	15	6	543	4	3	
	Total ...	565	768	18	18	177	15	6	1,155	7	3	

The material felled being Bábul trees overturned by floods, dry and old trees, and trees selected for removal to improve the young growth. The average felling cost per khandi comes to Re. 0-3-8 and average sale per khandi to Rs. 1-8-0. The felling at Jainpur in Nevása Range consisted of Bor trees.

Poona Division.

171. The timber material worked out in this division is shown in the following table:—

No.	Range.	Number of Trees.	Yield.		Cost.			Receipts.		
			Teak Pieces.	Firewood.						
				Khandies	Rs.	a.	p.	Rs.	a.	p.
1	Junnar...	4,767	12,379	...	263	15	9	4,534	0	9
2	Khed	9,683	31,864	...	773	14	6	6,705	8	0
3	A'mbegaon	7,000	26,925	260	490	15	0	8,552	5	0
4	Purandhar	4,000	12,218	86	209	15	9	2,900	8	6
5	Haveli...	5,762	16,582	200	451	5	9	4,617	12	0
6	Mával...	1,097	1,968	6¾	45	8	6	461	10	9
	Total ...	32,309	1,01,936	552¾	2,235	11	3	27,771	13	0

Firewood fellings were made to the extent shown below:—

No.	Range.	Number of Trees.	Firewood.	Cost.			Receipts.			Remarks.
			Khandies	Rs.	a.	p.	Rs.	a.	p.	
1	Junnar	115	250	44	11	6	681	10	0	
2	Sirúr	5,132	2,378¼	642	13	6	2,991	10	0	
3	Bhimthadi	7,328	3,893	1,127	5	6	6,488	0	0	
4	Bárámati	2,791	507½	198	5	3	927	12	0	
5	Haveli	1,059	1,918	496	2	0	4,731	8	0	
	Total ...	16,425	8,946¾	2,509	5	9	15,820	8	0	

The teak felling operations have been carried out more economically and have resulted in slightly higher rates of sale. The former is due to the regularization of the fellings. Firewood felling appears to have cost nearly double owing to the fact that the "coupes" have been fenced at the time of felling with thorns, the product of the felling. It was found impossible to separate this charge as felling and fencing were done by the same gangs of workmen.

Sátára Division.

172. The following statement gives the particulars of the teak fellings undertaken departmentally, including teak trees in Málki (occupied) survey numbers,

which the occupants declined to purchase at the valuation rates, all the produce was sold by auction:—

No.	Range.	Yield.		Cost.			Receipts.			Remarks.
		Teak Pieces.	Firewood.							
			Khandies	Rs.	a.	p.	Rs.	a.	p.	
1	Sátára	1,609	6	40	12	0	505	15	0	
2	Wái	3,046	44	100	6	0	861	0	0	
3	Koregaon	2,095	10	55	15	9	1,203	12	0	
4	Shirála	14,044	195½	322	14	9	2,651	13	0	
5	Karád	12,138	177	299	9	0	4,366	7	0	
6	Pátan	18,918	122	468	9	3	5,715	12	0	
	Total ...	51,850	548½	1,288	2	9	15,304	11	0	

Besides these the following miscellaneous junglewood pieces were brought into the market:—

No.	Range.	Pieces.	Cost.			Receipts.			Remarks.
			Rs.	a.	p.	Rs.	a.	p.	
1	Pátan	4,360	352	15	6	568	4	0	
2	Tásgaon	257	32	0	0	179	15	9	
3	Mahábaleshvar	1,091	77	0	0	149	3	5	
	Total ...	5,708	461	15	6	897	7	2	

At the end of the year 233 pieces remained unsold in the Málcolmpeth Depôt.

The firewood fellings were as follows:—

No.	Range.	Yield.	Cost.			Receipts.			Remarks.
		K. m.	Rs.	a.	p.	Rs.	a.	p.	
1	Pátan	335 14	143	2	6	467	12	0	
2	Tásgaon	73 0	26	15	6	119	5	0	
3	Khatáv	0 3	1	2	0	1	0	0	
4	Khandála	51 14	18	3	0	76	8	0	
5	Karád	182 14	131	0	9	311	12	0	
6	Mahábaleshvar	2,230 10	1,067	11	0	1,618	7	0	
7	Válva	5 0	2	13	0	7	10	0	
	Total ...	2,877 27	1,390	15	9	2,602	6	0	

Out of this felling 526 khandies and 1 maund remained unsold in the Málcolmpeth Depôt at the close of the year.

Eleven khandies and 20 maunds of charcoal, made at a cost of Rs. 55-5-9 in the Mahábaleshvar Range, and with 21 maunds remaining over from the previous year were sold for Rs. 87-4-0.

Sholápur Division.

173. In this division the departmental operations are restricted to the felling of a few large Bábul, Bor, or Limb trees as timber and to a few khandies of inferior kinds of the same as firewood. Chiefly dead trees are cut for firewood and thinnings are made in reserves where they are necessary. Trees blown by wind and uprooted by floods are also removed and classed according to the material.

Surat Division.

174. The departmental fellings were as follows:—

No.	Range.	Number of Teak and other Trees.	Yield. Rafters.	Yield. Firewood.	Cost.	Receipts.	Remarks.
				Khandies.	Rs. a. p.	Rs. a. p.	
1	Mándvi	9,731	19,633	...	1,752 0 0	.....	
2	Balsár	1,973	515	126 / 54 tons.	100 0 0	.....	
3	Dángs	1,689	Kh. ft. in. p. 2,802 10 11 1 / 1,040 0 10 1 or 1,344 pieces.	...	5,270 0 0	17,753 0 0	
4	Chikhli	89	.....	Tons. 37	40 0 0	.....	
	Total ...	13,482	21,492 / Kh. ft. in. p. 2,802 10 11 1	126 Tons. 91	7,162 0 0	17,753 0 0	

Panch Mahál Division.

175. The departmental firewood fellings undertaken during the year are shown below:—

No.	Range.	Yield. Teak.	Yield. Jungle-wood.	Yield. Total.	Cost.	Receipts.	Remarks.
				Khandies.	Rs. a. p.	Rs. a. p.	
1	Godhra	1,879	1,558	3,437	649 6 0	3,675 0 0	
2	Kálol	590	610	1,200	153 12 6	501 0 0	
	Total ...	2,469	2,168	4,637	803 2 6	4,176 0 0	

(*c*).—Bámbus.

Sátára Division.

176. Five thousand two hundred and eighty-three bámbus were cut in the Mahábaleshvar Range at a cost of Rs. 64-9-0 and sold with 8,666 remaining over from the previous year for Rs. 245.

(*e*).—Other Minor Produce.

North Thána Division.

177. The following quantity of Ain, *Terminalia tomentosa*, bark was collected and brought to the Government depôt for the requirements of the Koli (fishermen) of the district for sale at Rs. 5 per khandi:—

No.	Range.	Quantity.	Cost.	Receipts.	Remarks.
		K. m.	Rs. a. p.	Rs. a. p.	
1	Bassein	127 21	47 14 6	638 12 0	Of this 25 khandies were sold after the close of the year by auction for Rs. 50.
2	Máhím	27 0	11 10 0	135 0 0	
3	Dáhánu	30 14	41 12 0	126 8 0	
	Total ...	185 7	101 4 6	900 4 0	

In the Dáhánu Range the Ain bark remained unsold owing to the fishermen being able to obtain it more conveniently from the timber contractors who have bought up the "coupes" and who now bring this commodity in large quantities to the bandars for sale. In the Máhim Range after much difficulty

the Kolis were induced to take the bark collected for them, and in the Bassien Range there was not that eager demand there used to be, for the reason that they can get the bark they require from the contractors. It will thus be seen that the time has arrived for discontinuing these special arrangements which were first undertaken some 16 years ago when the timber operations were less extensive and were confined to a few of the better kinds of timber only, and not to every kind of tree as now by which means Ain bark is obtainable for sale from almost every compartment in the district in very large quantities.

West Khándesh Division.

178. A quantity of leaves of the Anjan tree, *Hardivickia binata*, after the trees had been felled in the course of timber operations was bought by Gowlies for Rs. 11. This deciduous tree is the fuel and fodder tree *par excellence* of these parts of the country where it will grow; it is a very elegant tree, the foliage has a bluish green shade and presents a very graceful appearance, the stem of the tree is invariably straight, the bark dark grey, deeply cracked. The timber reddish brown, very hard, exceedingly heavy and close-grained; it is durable but somewhat liable to split: some Anjan sleepers which were supplied to the G. I. P. Railway from the Khándesh forests a few years ago were said to be too heavy and hard to be fashioned easily, and at the same time they showed a tendency to split, and could not for these reasons be preferred to other kinds of sleepers; the timber is much prized for house-posts in native buildings, and for other uses. The Anjan is raised readily from seeds; it grows to the exclusion almost of all other kinds of trees, and is to be found upon the poorest soils where the rainfall is not heavy. Its bark yields a strong fibre. The wood makes an excellent firewood, and is in great request for the steam-mills which are so numerous in the Khándesh District. But the leaves give special value to this tree, cattle are very fond of them, and times without number have the Anjan trees in our forests saved the lives of cattle famishing for the want of grass and other fodder. During the present rains, 1888, the Anjan trees in the forests have been stripped of their foliage, and now in the autumn they appear with their naked branches like the frame-work of umbrellas divested of the cloth covering, for there has been a deficient rainfall, or very late rainfall, and very long breaks of dry weather, so that grass and crops have failed to grow, and in consequence there has been nothing green for the cattle to feed upon except the leaves of "fodder-trees," and the Anjan has been the most prominent of such trees; it has appeared in full green leaf when all around was parched and brown, bare and barren, thereby providing succulent fodder to save the cattle which have to plough the soil, to raise the food-supply of the country, and to pay the land revenue required by Government. Not only is the Anjan tree with its abruptly pinnate leaves beautiful and pleasing to the eye, but it is one of the most bountiful gifts of nature, and in a country subject to an uncertain and deficient rainfall the very high importance of creating "Fuel and Fodder Reserves" of the Anjan and other such provident trees upon poor soils unfit for permanent cultivation, for catching and storing the rainfall, for feeding famishing cattle, also upon considerations of sound business in the light of profitable investment, should not be overlooked.

179. A departmental collection of "Hirda," the fruit of the *Terminalia chebula*, another of the bountiful and beautiful trees of Western India, was made, as usual, in the South Thána, Násik, Ahmednagar, Poona and Sátára Divisions. The following comparative table shows the collections and disposals of the year under report and of the year before last:—

No.	Division.	Yield.		Cost.		Receipts.	
		1886-87.	1887-88.	1886-87.	1887-88.	1886-87.	1887-88.
		K. m. s.	K. m. s.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
1	South Thána ...	160 7 3	204 0 12	1,270 4 1	1,614 15 8	2,383 11 2	2,448 5 9
2	Násik	82 3 4	100 21 13	922 8 6	630 10 1	1,230 8 9	1,061 7 7
3	Ahmednagar ...	225 11 4	170 3 6	1,453 15 9	1,144 4 0	2,853 2 7	2,500 12 10
4	Poona	169 3 8	142 9 6	809 14 1	556 11 9	3,560 12 3	2,336 14 1
5	Sátára	691 17 4	385 15 10	4,934 13 4	2,699 5 9	6,718 15 0	5,246 2 11
	Total ...	1,328 13 23	1,002 21 19	9,391 7 9	6,645 15 3	16,747 1 9	13,593 11 2

180. In the South Thána Division the collected store of Hirda nuts was sold to a purchaser at Rs. 16-12-0 per khandi, but the man failed to pay the money and a re-sale had to be made when only Rs. 12 per khandi were realised. The deposit of Rs. 200 given by the first purchaser was forfeited, and measures were taken to recover the remaining balance of loss incurred by his default in accordance with the terms of the sale agreement which had been executed by him.

181. In the Násik Division the collection was confined to three ranges of Igatpuri, Násik and Kalvan, and the results were good.

182. In Ahmednagar the collection amounted to 55 khandies less than the last year, but the rate obtained at its sale was Rs. 2-0-9 per khándi in excess of the previous year's prices. Heavy rain and strong winds are said to have destroyed a large proportion of fruit upon the trees.

183. In the Poona Division the Hirda in three ranges of Junnar, A'mbegaon and Khed has been worked according to a plan which may be described as the share system. There are so many Hirda trees in these ranges upon private lands that it is difficult to prevent the fruit of the Government trees in the forests being robbed and smuggled away as Hirda from private trees, and it has been found locally possible and profitable in every way to enter into arrangement with the inhabitants of the Hirda villages to collect all the fruit from the trees within the village limits, to give a proportion to Government, about the estimated quantity of the yield of the Government trees in the village forest-lands, and to keep the rest. Thus the Forest Department is saved from constantly watching the Hirda trees in the forests, is not brought into frequent conflict with the villagers, and it receives probably a very larger percentage of the full crop of its trees delivered at its depôts free of cost.

184. In the Sátára Division Round and Beat guards were detailed to act as Forest Depôt Officers for the collection of Hirda. The crop is reported to have been a very small one as only 385 khandies 15 maunds 10 sers were collected, as compared with 691 khandies 17 maunds 4 sers in the previous year. The arrangement of taking forest guards away from their protective duty in the eastern and other forests to employ them on Hirda work in the forests of the Ghâts is very objectionable, for it exposes the forests which are deprived of their watchmen to be looted, at the same time it removes the supervision from the Hirda trees in the Ghát forests, the guards being called into the depôts, thereby exposing the fruit to be picked and stolen from the trees in the forests by villagers: and it puts temptation in the way of forest subordinates to be a little trading, for it gives them opportunities of embezzlement. But when temporary establishments cannot be entertained for Hirda operations, upon the grounds that their cost would raise the cost of establishments, permanent and temporary, of the Circle beyond a fixed sum which has been determined in the face of ample budget provision, there is nothing else to be done. If the Hirda is farmed the villagers complain that the contractors do not pay them a proper wage for collecting the nuts in the forests and bringing them to their stores, that they oppress them generally and departmental collections are made so that the Forest Officers may maintain a good understanding with the forest villagers of the Syhádris and that the latter may have a tangible interest in forest conservancy and its operations.

185. The Hirda tree, *Terminalia chebula*, inhabits the moist forests of the Western Ghâts, and the upper slopes and plateaus of the hill ranges in the Konkan where the rainfall is heavy. It is a handsome tree, with a straight stem, with bark dark-colored and cracked, with numerous spreading branches, leaves sub-opposite shortly petioled, ovate or oblong, acute or obtuse at the apex, cordate or obtuse at base, when full grown glabrous; the flowers are small, dull white. The nut oblong, thick and very hard with a rough surface and furrowed; it is "the black myrobolan" of commerce. The unripe fruit is used for tanning, dyeing and in medicine; the kernel gives a clear oil. Galls form on the young twigs. The timber is good, and is used when the tree is allowed to be felled for building purposes, but it is hard, and difficult to work.

186. A departmental collection of Shikakai, the pod of the *Acacia concinna*, was also made in the Sátára Division during the year and 49 khandies 12 maunds were obtained at a cost of Rs. 584-1-8, but were not sold owing to the low prices offered for them. These pods are thick, fleshy; when dry, wrinkled, 2½—4 inches long by ¾ broad, linear oblong and sometimes constricted between the seeds, tapering at the base, blunt with a thick point, glabrous; seeds rather compressed, black. The pod is used by native women for washing their heir, and it is said to give a soft feeling and glossy appearance to the hair.

2.—TIMBER AND OTHER PRODUCE REMOVED FROM THE FORESTS BY CONSUMERS OR PURCHASERS.

North Thá'na.

(a).—Timber and (b).—Firewood.

187. Extensive sales of timber standing in "coupes" were made to purchasers and contractors under agreements which were specially drawn up by the Legal Remembrancer whereby standards which had been selected and marked were to be reserved and all the remaining vegetation was to be felled and exploited.

The following were the results of these sales:—

No.	Range.	Number of Coupes.	Total Area.	Receipts.	Remarks.
			A. g.	Rs. a. p.	
1	Bassein	14	745 0	15,449 8 0	
2	Máhím	25	996 0	24,444 0 0	
3	Váda	11	613 0	24,548 0 0	
4	Dáhánu	25	1,438 0	50,481 0 0	
5	Umbargaon	3	147 0	6,505 0 0	
	Total ...	78	3,939 0	1,21,427 8 0	

Under the permit system employed as a means for supplying the wants of the local population, the following quantities of dead-wood were removed from the forests:—

No.	Range.	Head-loads @ 9 pies—man 6 pies—woman 3 pies—child.	Large Carts at Re. 1 each.	Small Carts at 8 annas each.	Kowl Khandies at 6 annas each.	Total.
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Sálsette ...	393 9 6	2 0 0	18 0 0	.....	413 9 6
2	Bassein ...	252 3 0	783 0 0	457 0 0	310 8 7	1,796 11 7
3	Máhím ...	.....	.....	1,595 8 0	533 6 2	2,128 14 2
4	Dáhánu ...	.....	.....	1,677 8 0	.....	1,677 8 0
5	Umbargaon ...	.....	.....	392 0 0	.....	392 0 0
6	Váda ...	.....	.....	24 0 0	.....	24 0 0
	Total ...	645 12 6	785 0 0	4,158 0 0	843 14 9	6,432 11 3

South Thána.

188. The following sales of standing timber in demarcated compartments were made to purchasers, in these cases the trees which had been selected for the axe had been marked, while the trees to be reserved as standards were not marked:—

No.	Range.	Number of Trees.	Receipts.	Remarks.
			Rs. a. p.	
1	Sháhápur	12,000	6,040 0 0	The average price per 100 trees, deducting expenses, was Rs. 72¼.
2	Khardi	4,000	1,951 0 0	
3	Mokháda	4,000	2,200 0 0	
4	Karjat	21,940	12,408 0 0	
5	Khálápur	6,284	3,459 0 0	
6	Murbád	8,000	3,562 0 0	
	Total ...	56,224	29,620 0 0	

And the sale of "coupes," which had been laid out by the Working-Plans Branch, the reserves being marked and the trees to be felled unmarked, provided considerable employment in wood-cutting and carrying, placed much timber in the market, and produced a considerable revenue as under :—

No.	Range.	Number of "coupes" sold.	Area.	Receipts.	Remarks.
			Acres.	Rs. a. p.	
1	Kalyán	7	267	6,626 0 0	The average price per acre was Rs. 32.
2	Bhiwndi	10	463	12,243 0 0	
	Total ..	17	730	18,869 0 0	

189. But the important feature in the year's working in the South Thána Division was the sale of the trees standing upon the Tánsa Lake wetted area, which is calculated to contain 4,916 acres 36½ gunthás, distributed thus :—

	A.	g.
Rice area	734	35½
Warkas area	1,821	15½
Unassessed area	2,360	26
Total ...	4,916	36½

All the forest lands below a contour line R. L. 425, as defined and marked upon the ground by special boundary-marks, and entered upon a plan, are required to be shaved of trees, as this area will be submerged when the dam of the lake has been completed, so tenders were invited for the purchase of the forest growth standing upon the lake-bed and it was sold in one lot to one Bhojabhai Alarakhé Koja of Bombay for a sum of Rs. 1,10,001, payable in ten quarterly instalments. The contractor is required to complete his fellings before the 31st May 1891, any trees remaining after that date to become the property of Government; to remove from time to time the timber from the lower levels so as to guard against any trees being submerged by the progressive up-building of the dam to his direct loss; not to fell more timber than the value of which is covered by the instalments already paid by him, and in the event of his desiring to fell and remove timber in greater volume, then another instalment of Rs. 11,000 to be paid beforehand upon the requisition of the Divisional Forest Officer. During the year three instalments amounting to Rs. 33,000 were paid, and the contractor was working honestly and well. The last instalment will be due on the 22nd December 1889.

190. Extensive sales of wood were made to Messrs. Glover & Co., the contractors for the building of the dam of the Tansa Lake, to provide firewood for their workpeople and fuel for their engines. Rs. 3,816-12-0 were realised therefrom. Likewise Rs. 1,295-2-0 were received from Messrs. Walsh Lovett Mitchell & Co., contractors for the construction of the duct to convey water from the Tansa Lake to the city of Bombay, on account of firewood supplied for their workpeople and works; and Colonel Frederick Beaumont, R.E., who has taken a sub-contract for boring tunnels for the Tansa duct, has purchased timber of the value of Rs. 2,588-10-0 for the purposes of his undertakings. Notwithstanding the very great multitude of workpeople engaged under the

several contractors upon the construction of the Tánsa Lake and the duct line, and that the works are being carried on in and adjoining forest-lands covered with valuable timber, and that the temptation to steal wood must be very great, as it is an article of necessary daily consumption by the thousands of Natives employed upon the several works, still there have been practically no complaints, and no prosecution whatever for breaking Forest laws, because the contractors have made timely arrangements in concord with the Forest Officers for the supply of their workpeople with firewood, hutting materials, &c., and have maintained excellent supervision and discipline; a perfect understanding has prevailed between the Forest Officers on one side and the officers of the Bombay Municipality and the Contractors on the other side. The Divisional Forest Officer, Mr. Millet, has acknowledged the hearty co-operation and vigorous assistance he has invariably received from Mr. Clerke, C. E., and his assistants who represent the Municipality on the works, from Mr. Bedford, C.E., the active and courteous representative of Messrs. Glover & Co., from Colonel Beaumont, and from Mr. James, the Agent of Messrs. Walsh Lovett & Co.

191. In addition to the foregoing sales, standing timber on the Tansa duct line was disposed of by public auction to various traders and others for Rs. 1,632-12-0. The quantity of firewood removed by cart and head-loads during the year upon permits by payment of fees amounted to 1,093 khandies, which realised Rs. 550.

192. In the Khándesh Divisions large quantities of forest produce are removed under the permit system, a scale of fees being fixed for each description of load or produce. Timber to the value of Rs. 13,561 and firewood worth Rs. 28,260 was thus removed by purchasers. As the Bhils are allowed to cut and take timber, save 16 reserved kinds, firewood, bámbus, &c., "for domestic use" *free of charge*, and as Bhils live all over the Khándesh District, close to the timber forests and miles distant from them also, it is not possible to safeguard against the sale of forest produce taken for "domestic use", and no doubt the Bhils in the abuse of their privilege sell the live-wood they cut and carry all over the country at the expense of forest revenues.

(*c*).—*Bámbus.*

193. Bámbus to the following extent were removed in the North Thána Division by the villagers for *bonâ fide* agricultural and domestic purposes :—

No.	Range.	Padai Bámbus, Rs. 5 per 100.	Manvel Bámbus, Rs. 3 per 100.	Bundhi, 8 annas per cart.	Zitas, 3 annas per cart.	Karvi, 4 annas per cart.	Total.
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Sálsette	142 2 3	36 6 0	1 10 0	1 15 0	72 15 0	257 0 3
2	Bassein	387 7 0	88 4 6	438 8 0	238 14 0	387 5 6	1,540 7 0
3	Máhim	140 0 6	403 14 0	839 4 6	249 4 0	58 9 6	1,691 0 6
4	Dáhánu	401 8 0	208 4 6	714 0 0	108 6 0	11 0 0	1,443 2 6
5	Umbargaon	1 8 0	15 0 0	161 3 0	51 12 0	54 4 0	283 11 0
6	Váda	40 9 3	60 5 0	207 5 10	9 6 0	0 15 0	318 9 1
	Total..	1,113 3 0	814 2 0	2,361 15 4	659 9 0	585 1 0	5,533 14 4

To meet the requirements of the trade the following quantities and kinds of bámbus were sold:—

Manvel Bámbus.

No.	Range.	Quantity. Nos.	Rate per 100.	Receipts.	Remarks.
			Rs. a. p.	Rs. a. p.	
1	Váda (1886-87)	19,800	2 2 0	420 12 0	
	„ (1887-88)... ...	2,00,000	2 2 6	4,406 4 0	
2	Dáhánu (1886-87) ...	13,600	2 0 0	272 0 0	
	„ (1887-88) ...	50,000	1 10 6	621 2 0	
3	Máhim (1886-87) ...	18,013	1 7 0	258 15 5	
	„ (1887-88) ...	70,000	1 8 0	1,050 0 0	
4	Bassein	750	3 0 0	22 8 0	
	Total ...	3,72,163	...	7,051 9 5	

Pádhaí Bámbus.

No.	Range.	Quantity. Nos.	Rate per 100.	Receipts.	Remarks.
			Rs. a. p.	Rs. a. p.	
1	Váda	15,000	4 0 0	600 0 0	
2	Máhím	10,000	5 0 0	500 0 0	
3	Dáhánu	10,000	4 0 0	400 0 0	
4	Bassein	750	5 0 0	37 8 0	
	Total ...	35,750	...	1,537 8 0	

194. In the South Thána Division the following quantities of bámbus were purchased under permits :—

4,652 Bámbus
187 Cart-loads } For Rs. 554-13-2.
3,124 Head-loads

195. In the Khandesh Divisions bámbus to the value of Rs. 5,406 were removed by purchasers. As Bhils are allowed to take *free of charge* for their private use or for their own manufactures bámbus from the forests, there is a great inducement for the receipts in the forest accounts from bámbus to be kept down by an unlawful competition.

196. In the divisions of Ahmednagar, Poona, Sátára and Panch Maháls bámbus were removed by purchasers, but to no such great extent as to deserve detailed mention.

(*d*).—*Grazing and Fodder Grass,*

and

(*e*).—*Other Minor Produce.*

197. In the North Thána Division the right to collect and remove minor forest products was farmed out with the following result :—

No.	Range.	Apta, &c., leaves.	Shembi bark.	Tad leaves.	Palas leaves and honey.	Total.
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Sálsette ...	....	...	630 0 0	106 8 0	736 8 0
2	Bassein ...	181 0 0	...	...	22 11 6	203 11 6
3	Máhím... ...	760 0 0	75 0 0	...	241 2 0	1,076 2 0
4	Dáhánu ...	751 0 0	...	...	161 0 0	912 0 0
5	Umbargaon ...	326 0 0	39 0 0	....	18 4 0	383 4 0
6	Váda	376 0 0	...	...	180 0 0	556 0 0
	Total ...	2,394 0 0	114 0 0	630 0 0	729 9 6	3,867 9 6

198. In the South Thána Division the sale of permission to cut grass and fees on grazing realised Rs. 4,455-8-6. The right to collect and take Apta and Temburni leaves produced Rs. 2,139-4-0 and that for Mhowra flowers in the Mokháda and Sháhápur Ranges only Rs. 125 ; other minor produce, such as karvi, thorns, stones, &c., produced Rs. 436-13-6.

199. In the Khándesh Divisions receipts from grass and grazing amounted to Rs. 78,155-10-8. In West Khandesh contracts for the manufacture of Rosha oil, which is extracted from *Andlopagon calamus aromaticus*, comprising 185 stills, returned Rs. 8,103, and by sale of lime, earth, stones, &c., in the two divisions Rs. 1,175 were received.

200. A revenue amounting to Rs. 9,043-4-0 was derived from the *Cassia auriculata* or Tarwad as the natives call this useful shrub in the Poona, Sátára and Sholápur Divisions. The Tarwad grows upon the poorest soil, also upon sandy soil as a small bush in a region of comparatively light rainfall, while on black alluvial soil it attains a height of 8 to 10 feet with a girth of 3 or 4 inches. It is easily raised from seeds and by coppice shoots, and it is troublesome to eradicate it. In about five years after cutting it is again ready for exploitation. The bark is in great request for tanning, for it imparts a brown colour to leather,

soft buff (badami) leather.
removed after hammering
p is in the wood the bark
on as the branchlets are cut.
or rheumatism, gout and sun-
meness in cattle. The stem of
es b aris and Guzars. The flowers are
ful. Instruction has been given to encourage by
the Tarwad, wherever it will grow well, and to
under a revolution of five years.

CE REMOVED BY RIGHT-HOLDERS.

, save of way and water access, have been found by the
Officers to attach to the forests of the Northern Circle, and
no *locus standi* in the forests.

4.—FREE GRANTS OF TIMBER.

A comparative statement of free grants of timber which have been
ring the past two years is given below :—

Division.	1885-86.	1886-87.	1887-88.
	Rs. a. p.	Rs. a. p.	Rs. a. p.
Thána	.....	50 0 0	43 14 0
Thána	619 13 0	336 5 0	1,464 4 0
ándesh... ...	.....	.....	15 10 0
hándesh ...	1,221 13 5	1,639 4 0	651 3 6
... ...	477 5 5	348 10 4	520 10 4
dnagar	.....	.....	34 7 8
... ...	470 0 0	120 0 0	95 0 0
.. ..	100 0 0	52 8 0	190 8 0
pur	.....	.....	.....
... ...	152 0 0	724 0 0	36 0 0
h Maháls	641 6 0	973 10 0	998 5 6
Total ...	3,952 5 10	4,244 5 4	4,049 15 0

HE VALUE OF FOREST PRODUCE APPROPRIATED BY CONCESSIONNAIRES.

The value of material removed from the forests free of charge under
s and special privileges granted by Government to forest villagers and
red classes, such as the Kolis, Katkaris, Thakurs and Bhils, &c., is
ult to estimate; but the several Divisional Forest Officers have
imated it at Rs. 7,26,610-6-0, the details of which will be found in
ng statement :—

showing the estimated value of Produce removed by Privileged Persons in the several Divisions of the Northern Circle during 1887-88.

on.	Timber.	Firewood.	Bámbus.	Grass and Grazing.	Leaves.	Fruits.	Minor Produce : Honey, Wax, Mhowra Flowers, Earth, Stones.	Karvi.	Ráb.	Total.
							Rs. a. p.	Rs. a. p.	Rs.	Rs. a. p.
..	17,175	85,875	...	42,937	1,000	...	.....	.....	21,468	1,68,455 0 0
...	...	1,90,000	...	25,000	15,000	200	50 0 0	1,000 0 0	20,000	2,51,250 0 0
sh ..	2,400	1,800	...	1,200	...	...	4,000 0 0	.....	...	10,600 0 0
esh..	16,000	12,000	8,000	18,000	...	...	10,000 0 0	.....	...	64,000 0 0
...	...	7,560	...	23,275	200	300	631 4 0	15 10 0	...	31,981 14 6
	...	...	...	2,181	...	...	.....	.....	...	2,181 0 0
	...	...	...	74,000	...	...	1,063 8 0	.....	725	75,788 8 0
	...	4,000	...	17,500	...	...	3,500 0 0	220 0 0	1,000	26,220
	...	...	...	24,584	...	...	.....	.....	...	24,58
	000	10,000	2,000	3,500	900	...	2,500 0 0	.....	...	
		10,000	...	15,000	...	...	650 0 0	.....	...	
		3,21,235	11,200	2,47,177	17,100	500	22,394 12 0	1,235 10 0	43,193	

204. Forest conces
ciation of the value of a
of the concession itself repr
Thána District or whereve
of ráb may be worth the fract
done to the tree by cutting off
destruction of the seedling or the
value to the forest subjected to extensive ráb cu
privilege" in the Thána Divisions which not only
of charge of trade stock, *i.e.*, of commercial material,
by the forests, but also induces the destruction of living
the capital property, for young, growing and immature tre
wood. The free grazing concession under which sheep and
and a disproportionately large number of cattle, beyond the g
admitted, to damage the source of supply; cattle are admit
young and coming on, when they do more harm to the crop an
the value of the benefit they receive; when fees are charged, the
lower rate of fee than could be obtained in the open market is a clear
tion of value. It is obvious that in a correct account of stewardship the
of all and every direct or indirect depreciation should be recorded.

205. Under existing circumstances it is difficult, if not actually
to make a reliable estimate of the value of forest produce absorbed in
of taking, and of coming and going. An estimate of the probable re
of so many head of population, even if a tolerably correct estima
consumption were possible, would be wide of the mark, for it would tak
of the material obtained and obtainable from other sources of sup
the other hand of the produce obtained by the concessionists free an
them, not for domestic consumption but for trade; there is not the l
that such is extensively practised.

206. If the exercise of privileges were to be brought under c
management, such as would result from the localization of the su
for the regulation of the number of concessionnaires admmitted into
and a provision that each class of produce shall be removed at fixed p
in stated quantities under a permit, then it might be possible to as
value of the forest produce absorbed, and at the same time to depri
vilege system of a considerable portion of its power to work ev
forests.

207. When forest settlements conducted very carefully by sele
Revenue officers show that the public estates are absolutely free from
appropriation and of coming and going in favour of individuals and co
there would seem to be no room for the people to claim such a state of thing
ing the forests and absorbing the State revenues as indiscriminate g
partially free, of public property. "Free grazing" as allowed converts
Forests" into "Public Commons," a proceeding which not only der
the rights of the State, but squanders a source of natural wealth. If
had to pay grazing-fees to the Forest Department at rates to be deter
Forest Officers, and if subsequently a refund were to be made by Land
Officers from their budget to such owners of cattle as may have
enjoy free grazing for the reason that the cattle rejoice in the dist
"agricultural cattle," then a vast improvement would be seen in the
of forests and in the forest-grazing revenues, and possibly also in t
the country.

6.—IMPORTATIONS AND EXPORTATIONS OF TIMB

208. The following statements will show the importa
d other forest produce into the Khándesh District
lpur direction during the year ending 31st December

Railway Stations.	Firewood.	Hurrah or Hirda.	Moho-flowers.	Moho-seeds.	Rafters.	Timber.
	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.
Chálisgaon ...	10,005	...	11,185	...	800	1,059
Páchora	8,429	...	5,982	...	2,818	1,006
Máheji	87	370	3,693	...	398	41
Jalgaon	1,34,599	243	9,806	...	10,574	9,953
Bhusával	41,489	25	10,953	...	10,658	3,098
Sávda	9,167	62	9,415	...	21,955	1,979
Ráver	4,851	42	...	...	3,492	2,371

CHAPTER V.

FINANCIAL RESULTS.

209. The following table exhibits a comparison between the revenue and expenditure of three years :—

Official year.	Receipts.	Expenditure.			Net Revenue.
		A.—Conservancy and Works.	B.—Establishments.	Total.	
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
1885-86 ...	10,37,296 9 7	1,89,881 11 7	4,73,758 0 5	6,63,639 12 0	3,73,656 13 7
1886-87 ...	9,13,100 15 6	2,09,072 11 10	4,78,792 3 8	6,87,864 15 6	2,25,236 0 0
1887-88 ...	9,68,625 3 5	2,26,095 14 1	4,97,039 9 9	7,23,135 7 10	2,45,489 11 7

210. The gross receipts of the year under report are, it will be seen, greater than of the year 1886-87 and amounted to Rs. 9,68,625-3-5, showing an increase of Rs. 53,525.

211. The distribution of receipts among the several divisions in the Circle, compared with the collections of the preceding year, is as under :—

No.	Forest Division.	1886-87.	1887-88.	Increase.	Decrease.
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Direction	25 4 0	41 11 8	16 7 8	.....
2	North Thána	2,19,187 14 9	2,17,968 8 9	.....	1,219 6 0
3	South Thána	1,03,841 7 7	1,42,588 10 1	38,747 2 6	.....
4	East Khándesh ...	61,888 14 4	75,559 1 0	13,670 2 8	.....
5	West Khándesh ...	90,902 15 5	1,13,236 2 10	22,333 3 5	.....
6	Nasik	1,06,586 9 7	82,051 4 10	.....	24,535 4 9
7	Ahmednagar	44,116 12 11	45,483 14 8	1,367 1 9	.....
8	Poona	89,928 5 6	93,819 8 9	3,891 3 3	.....
9	Sátára	69,101 0 2	68,832 5 10	.....	268 10 4
10	Sholápur	7,392 15 3	16,444 8 2	9,051 8 11	.....
11	Surat	69,704 3 2	55,485 9 7	.....	14,218 9 7
12	Panch Mahals	50,424 8 10	57,060 10 7	6,636 1 9	.....
13	Working Plans ...	.....	53 2 8	53 2 8	.....
	Total ...	9,13,100 15 6	9,68,625 3 5	95,766 2 7	40,241 14 8

212. There is an increase in revenue in the Divisions of South Thána, East Khándesh, West Khándesh, Ahmednagar, Poona, Sholápur and Panch Mahals. The revenue of the year under report has increased by Rs. 55,524-3-11 over the revenue of the preceding year. The following are the attributed causes in South Thaná Division, owing to the sales of timber to the contractors of the ...sa Lake water-works, and to advanced prices obtained at sales of the timber ... departmentally; in East Khándesh the revenue of the year is the highest ...ord, which is due to better prices obtained for timber felled by Govern-

ment, and to larger collections of grazing fees; in West Khándesh brisk sales with fair prices have taken up the receipts almost to the figures of 1884-85; in the Ahmednagar Division the grazing and timber revenues are the largest that have been realised during the last seven years; in the Poona Division better prices have ruled sales of teak rafters and firewood felled departmentally, and a demand for forest produce removed by purchasers or consumers has arisen; in the Sholápur Division an increase of Rs. 9,051 has followed the sale for grazing of some of the valuable kurans in place of sale for grass cutting only as in the previous year; in Panch Mahâls better prices have attended the sales of standing teak and other timber. The figures of revenue which appear against "Direction" and "Working Plans" are on account of refunds and miscellaneous receipts, which cannot properly be credited to the heads of revenue.

213. There has been a decline in the revenue of the Forest Divisions of North Thána, Násik, Sátára and Surat, though there is a net increase of Rs. 55,524-3-11 in the whole Circle. The causes of the decreases are thus explained. In North Thána Division the decrease amounts to Rs. 1,219-6-0 only, but a much higher revenue was expected than has been collected; the difference is owing to very low prices having been realised at the retail auctions held in the Máhím Range; these sales are intended for the benefit of the coast villagers so that they may obtain their requirements in timber direct from Government and not through timber dealers, so that they may not have to pay the middleman's profit: it is also due to the prices of firewood in the Bombay market continuing abnormally low, owing to the very large quantities of this commodity that is poured into that market from other directions than from the Thána Collectorate, several of the "coupes" in this division when offered for sale could not attract purchasers and remained unsold, the reason assigned by timber dealers being that they could not engage sufficient labour to fell and exploit all the material. No more complete refutation than this could be given of the oft-repeated complaints made by agitation-mongers and re-echoed sometimes by others who should know better, of the Forest Department not providing sufficient employment in the congenial occupation of wood-cutting and carrying to the numerous population of "wild tribes" in the Thána Collectorate.

214. In the Násik Division there is a decrease of Rs. 24,535-4-9, as the whole of the timber felled and stacked in the Peint Range and a quantity in the western forests of the Dindori Range, or 75,000 teak rafters in all, remained unsold at the close of the year, owing to the very low prices offered by dealers, who were probably influenced by the fact that the timber in over $\frac{2}{3}$ of 11 inám villages in the Peint Range had been made over to the inámdárs under a recent order of Government, and that all this timber would be coming into the market as fast as it could, to lower prices and depress sales. In the Sátára Division a small decrease of Rs. 268-10-4 appears, which hardly calls for notice; but the revenue would have been much greater had not the crop of Hirda and Shikakai been a very indifferent one, and had their sale been completed within the year under report; moreover a decline in the grass revenue has resulted from the opening of the Southern Marátha Railway which has diverted to the steam-horse which does not consume grass, the large passenger traffic by means of phaetons, tangas, bullocks and dhamnis which has been busy for many years upon the Poona, Sátára, Kolhápur and Belgaum high road, and a considerable portion of the goods traffic which depended upon bullock-carts. In the Súrat Division there is a decrease of Rs. 14,218-9-7, as the timber departmentally felled in the forests of the Mándvi Range, in Velvanch and in the Dángs, remained unsold; and hence the actual collections made in this division during the year amounted to Rs. 55,485-9-7 only.

215. Expenditure under "A Conservancy and Works" distributed among several forest divisions, as compared with the expenditure of last year, is as under:—

No.	Forest Division.	1886-87.	1887-88.	Increase.	Decrease.
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Direction	42 14 2	125 12 0	82 13 10	.....
2	North Thána ...	31,454 14 0	24,900 0 0	.....	6,554 14 0
3	South Thána ...	31,475 12 9	30,589 13 11	.....	885 14 10
4	East Khándesh ...	9,222 7 3	9,335 14 6	113 7 3	.....
5	West Khándesh ...	10,723 4 6	16,680 2 7	5,956 14 1	.....
6	Násik	14,175 7 1	33,464 9 11	19,289 2 10	.....
7	Ahmednagar ...	17,016 7 8	14,955 13 5	.....	2,060 10 3
8	Poona	24,466 9 4	16,914 9 11	.....	7,551 15 5
9	Sátára	19,826 7 10	25,722 2 10	5,895 11 0	.....
10	Sholápur	7,998 0 8	3,844 15 2	.....	4,153 1 6
11	Surat	21,854 8 10	25,567 7 2	3,712 14 4	.....
12	Panch Mahála ...	4,940 0 10	4,588 8 4	.....	351 8 6
13	Working Plans ...	15,875 12 11	19,406 0 4	3,530 3 5	.....
	Total ...	2,09,072 11 10	2,26,095 14 1	38,581 2 9	21,558 0 6

216. The expenditure under "A Conservancy and Works" shows a decrease of Rs. 21,558-0-6 upon that of 1886-87 in some divisions, while in others there is an increase of Rs. 38,581-2-9, and thus there is a total increase of expenditure amounting to Rs. 17,023-2-3 upon the previous year.

217. Timber was not felled departmentally to so great an extent as in 1886-87; but more timber was sold on foot to purchasers for felling and removing at their own expense; and hence the expenditure under A. *I.* is less than of previous years.

218. As the payment of remuneration to village officers for collecting forest receipts, chiefly of grazing, was brought up to date by the disbursement of large sums due for past years in the Sátára and other divisions, the expenditure under A. *II.* appears to be unusually heavy.

219. In the Sátára Division the payment of lease-money required to be made to certain inámdárs in the Mahábaleshvar Range whose forest lands have been rented by this Department had in some cases fallen into arrears for three or four years, the greater portion of these arrears were cleared off during the year, and in the Ahmednagar Division larger payments were made under forest conservancy agreements to Rakwáldárs, and for these reasons the total disbursements under A. *V.* are greater than ordinarily appears.

220. The cost of the establishments of Forest Settlement Officers and of their contingent expenditure is debited, together with the expenditure incurred upon the construction of forest boundary-marks, to A. *VIII. a.*

221. Compensation for "Land and Rights" A. *VIII. b.* was a sub-head of considerable expenditure owing chiefly to the disbursement made for acquiring occupied lands located upon the catchment area of the Tansa Lake in the South Thána Division where a Special Officer, Mr. Vishnu Ramchandra Ashtikar, is employed in negotiating with the people whose rights under the survey settlement have to be acquired by either money payment or by giving other lands elsewhere for cultivation in exchange.

222. "Surveys and Working Plans" A. *VIII. c.* contains the cost of the forest survey by the Government of India which, as stated before, has been a considerable outlay with very little return; and the cost of the Divisional Forest Officer of Working Plans, of his establishments and of his operations in the forests. As the Divisional Forest Officer belongs to the permanent superior staff, his salary and travelling allowance, as well as the cost of his personal establishments, should, the Conservator is of opinion, be more correctly shown under "B Establishments" and his working expenditure only should come under A. *VIII. c.*

223. Under "Plantations" A. *VIII. d.* and "Protection from fires" A. *VIII. e.*, and "Other Works" A. *VIII. f.* the expenditure has not been great.

The survey charges of the Government of India's Topographical Party have caused the total expenditure under A Conservancy and Works to exceed the sanctioned estimate, in which no provision was made for such charge.

224. B Establishments contains an item of Rs. 10,228-14-3, which calls for special remark, for it represents the amount of the payments made by the Accountant General at Bombay of their salaries and allowances to Forest Officers belonging to other Presidencies and parts of India when passing through Bombay on leave. This charge has no connection whatever with the forests of the Northern Circle, and the sums which taken together make up the amount should properly be transferred to the debits of the Forest Circles to which they belong, for the amount decreases the surplus revenue of this Circle and in a comparative statement of financial results of the several Forest Circles in India it is doubly disadvantageous to the Northern Circle.

CHAPTER VI.

GENERAL REMARKS.

225. On the 1st April 1887 the Conservator's camp was in the Násik District in the Chándor Range, from whence he marched into the head-quarters station, Násik, and from there through the forests of the Sinnar Range into the Akola forests of the Ahmednagar Division, and passing through a portion of the forests of the Sangamner Range he travelled into the Poona Collectorate inspecting the Junnar forests, and encamped at Ghatghar at the head of the Nána Ghát at the end of April; and from that place with the Divisional Forest Officer of Poona, Mr. Wroughton, the Conservator, walked all along the Syhádri Mountain Range, or Western Ghats, through the Koli country and the Forest Ranges of Junnar, Ambegaon, Khed and Mával to Khandála, when the moist forests upon the Ghats upon their eastern and western slopes were inspected. A forest guard bringing the post for the Conservator and Divisional Forest Officer to Bhimáshankar was waylaid and beaten by dacoits, but upon being recognised to be a forest guard and not a police man, as had been supposed from his uniform, he was allowed to proceed with all the letters he was carrying, save one or two which the dacoits kept.

226. From the 16th May to the 5th June the Conservator was encamped at Bhushi beyond Lonávla, and inspected the Ghát forests south of Khandála; he had also the advantage of meeting the Commissioner, Northern Division, here, and had conversation with him upon forest matters; on the 6th June camp was removed to the head-quarters station, Poona, for the rains, and while there the Conservator gave evidence before the Sub-Committee of the Public Services Commission in the matter of the requirements of the Forest Service of the Bombay Presidency. Colonel Peyton, late Conservator of Forests, Southern Circle, was a member of the Sub-Committee appointed by His Excellency the Governor in Council to represent the local Forest Department.

227. During the month of November 1887 and up to the 11th December the Conservator was in camp in the Ahmednagar Division, the Divisional Forest Officer, Mr. Mainwaring, accompanying him through the Eastern Ranges upon the Nizám's frontier where forest protection was found to be very fair, and the reserves, which had been bare of all vegetation when brought under charge of the Department after the famine of 1877, were found to be covered by an advanced growth of Bábul and other trees. In the village of Sawantchar there is a long stretch of beautiful Bábul forest on the bank of the Godávari river, very unfortunately sheep had been allowed to graze in a section of this reserve in portions of which the trees were not close together as in other parts and were not "defensable" against grazing, but where a good crop of grass might have been looked for if cattle had not been admitted, for there were bushes and young trees growing sparsely with open ground between them, and the village officers of Sawantchar, who accompanied the Conservator, drew his attention, and the attention of the Divisional Forest Officer, Mr. Mainwaring, to the fact that the ground where the sheep had been grazing was bare as macadamized road, there was not a blade of grass or a stock of grass roots visible.

The contrast with other portions of this reserve was most marked, a fair crop of grass was still to be seen elsewhere, and the dew upon it was sufficient to wet the boots and leggings, and the village officers said, "*Look, Sir; sheep have done this; they have deprived our cattle of their grazing.*" The Kopargaon Bábul forests spreading for two or three miles on both banks of the great Godávari were a very refreshing sight, the Conservator encamped inside of them at the river's edge and thoroughly examined them; not many years ago before the lands came under forest conservancy much of the land now containing a valuable and a benificent growth of timber was a wilderness, stony and unproductive, an eye-sore and a source of harm.

228. At Bokta on the borders of the Yeola Range in the Násik Division and on the confines of the Nizám's territory the Divisional Forest Officer, Násik, Mr. W. G. Betham, joined the Conservator's camp, and marched through the border forests in the Yeola and Nándgaon Ranges along the Satmála hills. Everywhere protection was good, no doubt there had been cattle trespass, but not more than must be expected when there are large spreading tracts of forest unfenced against cattle, and where the grass in these forests is far superior in quality, and is denser in growth, to the grass outside, and consequently is a great temptation to hungering cattle, and to the drovers of many animals. The Anjan trees, the teak trees, the junglewood trees and the Bábul with its associates in the several tracts inhabited by these different kinds of trees respectively, were found to be growing into good timber, and the protection against cutting was excellent. From the top of Manikpunj fort a very pleasing view was obtained of young forests all round, grown since the Conservator has had charge of this Circle now 19 years ago, and under the direction of such good Divisional Forest Officers as Messrs. Wroughton and W. G. Betham, and under smart, active, though uneducated, Range Forest Officers. From the Nándgaon Range the Conservator passed on to the forests of the Chálisgaon Táluka of the East Khándesh Division upon the highlands of the Satmálas and he descended by the Outram Ghát into the Pátna "Reserved Forest," and at Chálisgaon dispersed his camp for the Christmas holidays. The Pátna Reserve has improved very greatly during the past seven years, the upper slopes exhibit fine tall teak, blackwood and other junglewood seedlings with clean stems intermixed with bámbus, a sight which might have been hunted for in vain five or six years ago; and down below in the glen the Anjan trees have filled up blanks and present as splendid a "Fuel and Fodder Reserve" as can be seen anywhere. This is the work of the Forest Department, and starving cattle have already proved the beneficence of the undertaking. From the summit of the Outram Ghát the view of the plains of Eastern Khándesh stretching out for miles with the blue Sátpuda Mountains bounding the horizon in the far distance, was very grand, patches of dark green in the landscape pointed to forest reservations.

229. After Christmas the Conservator rejoined his camp at Páchora in the East Khándesh Division, and after visiting the Model Farm of Bhadgaon, and endeavouring unsuccessfully to obtain it for a "Fuel and Fodder Reserve" in place of the abandonment by Government of two-thirds of the property with its sale for cultivation, he proceeded into the Jámner Range, inspecting the teak forests, &c., along the frontiers of the Nizám's territory and the operations of felling, exploiting and stacking teak rafters then in progress. At Ajanta the Forest Settlement Officer, Khándesh, Mr. Dodgson, met the Conservator, and discussed forest matters. The young forest said to belong to His Excellency Sir Salar Jung covering with verdure of varying shades the slopes of the Ajanta glen, with a clear stream of running water at its base, was a much more pleasing sight than the famed caves of Ajanta, which are fast going to ruin; if these forests are protected and worked scientifically, they cannot fail to be a source of constant and expanding revenue. The roads from the railway stations to Ajanta were found to be execrable for wheeled traffic. Passing through the Jámner Range where the Divisional Forest Officer, Mr. W. G. Clabby, joined his camp, the Conservator marched through a narrow strip of the Berars past the town of Mulkápur, across the Purna river, to the forests of the Hatti hills in the Edalabad Range of East Khándesh. The local Revenue Officer of Mulkápur, belonging to the Berar Commission, a very gentlemanly

Bráhmin from the South Konkan, called upon the Conservator, and conversed very intelligently upon forest conservancy, explaining that he was then engaged upon selecting suitable sites near Railway stations for the formation of "fuel and fodder reserves." The Conservator marched through the Transpurna "Reserved Forests" from end to end, climbing the slopes of the Hatti hills, and walking along the Khándesh and Nimár frontier; and he inspected the Bábul fellings and the stacked material near Ghodasgaon upon the banks of the Purna, and then he marched across the Tápti into the Ráver Range, the Anjan forests and the felling operations were visited, and the boundary line between the Ráver, Sátpuda forests and the Nimár forests was walked over and examined; and from thence the Conservator went up to Pall and passed through the Sátpuda forests of the Sávda Range, then he visited the teak forests and the felling operations in the Yával and Chopda Ranges in the Sátpudas successively, and the Sátpuda forests of the Shirpur and Sháháda Ranges, and met Mr. Fagan, the Divisional Forest Officer, West Khándesh, at Sháháda.

230. The forests of the Sátpudas in the Khándesh Collectorate, despite the privileges which have obstructed improvement and have caused the depletion of particular tracts, have, regarded as a whole, increased in wealth to an enormous degree; where fire conservancy has been successful, unmistakable progress is the effect. Young trees are to be seen standing closer together, more numerous upon the areas, their stems are straighter and taller and the ground is springy to the tread, and the better storage of rain water and the action of these high level natural reservoirs in nourishing the sub-soil drainage towards the Tápti river, is to be seen in the miles and miles of waving crops of corn covering the broad strip of cultivation along the Tápti valley, varying from 6 to 12 or 15 miles in breadth, between the Sátpudas and the Tápti river. The wheat was being harvested, and Bhils and poor villagers from the South Tápti tálukás, and from foreign states, had come to this land of milk and honey with their wives and their little ones to obtain employment in reaping and garnering.

231. From Sháháda the Conservator re-crossed the Tápti river and marched through the Sindkheda Range into the head-quarters station of the Collectorate, Dhulia; portions of the Sindkheda and Dhulia forests were inspected; and while his camp was proceeding by road to Násik through a country he had visited the year before, the Conservator and part of his office proceeded to Poona by railway. Rejoining camp at Násik on the 6th March the Conservator marched through the Násik and Dindori Ranges into the Peint Range below the Ghats; here the Divisional Forest Officer, Mr. W. G. Betham, met him, and the forests and forest works were inspected, and the camp marched by aid of porters through the forests upon the Dharampur State frontier, south, towards the Thána District. The forest demarcation in this natural forest-country is very defective, extensive areas of natural forests covering ravines and steep slopes have been left outside the reservations, because the governing principle of the selection work for forest reservations was to exclude in the first instance 100 acres for every plough in the village, and then to place what might remain, if suitable for the purpose, into forest reservation; in consequence land, densely covered with magnificent trees, which no plough can ever touch, has been left out, and what might have been a solid continuous block of forest is cut up into several detached blocks. The teak timber, the junglewood and the bámbus constitute a mine of wealth, and the development of the Peint forests during the past decade has been extraordinarily great; a corner of the Mokháda forests of North Thána was visited, and then the Conservator marched through portions of the Dharampur and Daman territories to the Umbargaon Range of North Thána where he, the Divisional Forest Officer, Mr. Wilkins, and the Divisional Forest Officer of Working Plans, Mr. Fry, met him, and his camp continued up to the 31st March in the Umbargaon Range where "coupes" were visited, and forest business discussed in the forests.

232. The Conservator had heard a great deal of the forests and of the forest conservancy of the Portuguese Government in Daman; and as the condition and capabilities of these forests, and of the adjoining forests of the Dharampur State, has a close bearing upon the working and the revenue of the British forests, of the Peint Range in the Násik Division, and of the Umbargaon and Dáhánu Ranges in the North Thána Division, he wished to see what

their state might be; and he found that there was absolutely no forest conservancy, and no timber whatever was left in the country, for the axe and fire had shaved the hills; and as one result the heat was terrific, there was a scarcity of trees to encamp under, and the thermometer ranged up to 105° inside double-fly tents. The Peint forests have a grand future before them and they should most certainly be solidified and made continuous while there is yet time and means to do, and the Conservator would very strongly urge that he should be permitted to submit a supplementary forest conservancy scheme for the Peint táluka.

233. Almost all the Divisional Forest Officers in the Circle have worked excellently, and have given cordial, ready assistance to the Conservator in carrying out the directions of Government and in managing the forest estates to their best advantage, and also to the promotion of public interests. It may be invidious to draw distinctions, but the Conservator would be failing in duty were he to neglect to record that Messrs. R. C. Wroughton, W. G. Betham, H. Mainwaring, T. B. Fry, R. S. Fagan, A. D. Wilkins, F. Gleadow, H. W. Keys, and G. P. Millet have been specially conspicuous for the intelligent and energetic manner in which they have administered their divisions. Mr. C. Greatheed has worked hard and well in the Sátára Division, as has Mr. Hornidge in the Sholápur Division. Mr. W. G. Clabby, a young officer, has managed the East Khándesh Division very satisfactorily; and Mr. R. H. Madan, L.C.E., has been most useful and active, and is an excellent Forest Officer. It is a pleasure for a Conservator to work with such assistants as the above-named officers; and if the results of the administration should not be considered to be successful, the cause of failure is not to be found with the working hands.

234. The Forest Officers of the Northern Circle especially, as well as Government, had to deplore the loss by death of two prominent Forest Officers during the year. Mr. G. St. P. L Gibson, Deputy Conservator of Forests, 2nd Grade, who died in Bombay on the 13th July 1887 from the effects of the injuries inflicted upon him by a dying tigress in the Nawapur forests of West Khándesh two months before, and Mr. Govind Ramchandra Mahajan, Sub-Assistant Conservator of Forests, 2nd Grade, who had risen from a very subordinate position to high rank through highly approved service extending over 28 years. Mr. Mahajan commanded the respect and esteem of every officer under whom he had served, and his death from the effects of jungle-fever at Poona, on the 19th June 1887, has deprived the native branch of the service of a very exemplary officer.

235. The Collectors of the several districts take active participation in forest business, and give the Department every reasonable support according to their respective views of forest conservancy; and the Commissioner, N. D., Mr. Sheppard, has evinced the greatest interest in the preservation of trees and the protection of forests. And the Conservator must acknowledge the very ready assistance and consideration that he and his officers have received on all sides. Mr. W. Loch, C. S., the Collector of Khándesh, has recorded upon the Divisional Forest administration report of his district:—

"The Forest Department have certainly not been over-severe in East Khándesh either in instituting prosecutions or in impounding cattle."

"Mr. Clabby, during the short time he was in charge, worked hard and took much interest in every thing connected with his charge. With more experience he will make a very useful forest officer."

" * * * * * * * *"

"The undersigned wishes to express his sense of the able way in which Mr. Fagan has carried out his duties. A zealous and energetic forest officer and a good disciplinarian, he is courteous and obliging in all official matters and most desirous of gaining the co-operation of the forest villagers."

Mr. G. Wadington, C. S., the Collector of Ahmednagar, writes:—

"The Collector is glad to bear testimony to the good work done by Mr. Mainwaring during the year of report. The relations of the Forest Department with revenue and other officers were harmonious."

Mr. J. M. Campbell, C. S., Collector of the Panch Maháls, has remarked:—

"The result both of general information and of the special inquiries connected with the forest grazing settlement has been to impress the undersigned with Mr. Keys' care and success in removing and preventing friction between the forest staff and the villagers."

236. The forest administration of the Northern Circle has been subjected to a very searching inquiry by the Forest Commission which has been sitting for a period extending over about 18 months, and the judgment recorded in the four volumes of their report, which has appeared during the year, has not been altogether unfavourable to the Department, for it has been stated in one of the leading newspapers of the Presidency that "the inquiries have succeeded in completely crippling the case put forward by a set of agitators in the Konkan. In this respect much good has been done, and the prestige of the Forest Department has been upheld."

237. The manner in which "the case" was put forward against the Forest Department may be judged from the statement made some time after his examination, by Soma bin Gomaji Patel of Airawli in the Sálsette Range of the North Thána Division, who, when examined before the Forest Commission, had stated that the Beat Guard in charge of the Airawli and adjoining forests had prevented the villagers from taking fruit of trees planted by them in the forest lands because the people did not specially subscribe to the general fund raised to subsidise the forest guards in order that the latter should allow the villagers to take firewood and ráb material from the forests without restriction. The Collector of Thána forwarded a transcript of Soma's evidence to the Divisional Forest Officer, North Thána, requesting him to enquire into and report upon the allegations made by the Patel with the result that Soma bin Goma affirmed—

(1) Forest guards do not prevent us grazing our cattle in the forests.

(2) There is no dead firewood in the forest of our village, and therefore we want to cut living trees and take green firewood, but the forest guards will not allow us to do this.

(3) Nobody prevented us taking táhál for ráb last season.

(4) No forest official has up to now prohibited us from bringing fruits of any of the fruit-bearing trees in the Government forests.

(5) We have never raised a fund to be paid to forest guards in order that they may not object to our removing dead firewood or táhál from forests; we have never paid any money to them, nor have the guards ever demanded any money from us.

(6) The "Members," (who collected the evidence to produce before the Commission) told me to give my evidence to the effect that we paid money to forest guards to allow us to take firewood and táhál from Government forests. But really we never yet gave any money to the Beat Guard. I was selected to represent the view on forest matters of the Khairni Patti; what I stated before the Commission against the guards was simply put into my mouth by the members. I do not remember the names of the members.

A copy of this statement was forwarded by the Conservator of Forests to the Collector of Thána.

238. The Divisional Forest Officers testify to the good work done during the year by the undermentioned Sub-Assistant Conservators:—

Mr. Waman Ramchandra Gaunde in the Poona Division,
Mr. W. A. Wallinger in Násik Division,
Mr. J. H. Clabby and Mr. G. F. R. Blackwell in North Thána,
Mr. G. S. Hinge, acting in West Khándesh;

and they mention particularly the approved services of the following Range Forest Officers:—

Rangers.

Shaik Abas Shaik Ali.
Hasan Ali Mahomed Ali.
Joseph Baptista.
Waman Gopal Tumne.
Abdool Rasool Khajbax.
Laximon Bhewji Papdé.

Vishnu Mahadeo Tilak.
Govind Ramchandra Takle.
Balaji Dhondeo Dhekne.
Ramchandra Raoji Bodwadkar.
Shitaram Hari Veze.

239. The office establishments have performed their duties in a highly creditable manner, and the following names are specially mentioned:—Messrs. Ganesh Sakharam Hinge, Krishnaji Babaji Phadke, Mahadeorao Narayen Gokhle, Shivram Bhikaji Rangnekar, Trimbak Govind Mahajan, Trimbak Bhickaji Lawhate, Kesheo Pandurang Kowthekar, and Damodhar Tukaram.

240. The Conservator examined during the year the Divisional Forest Offices of Ahmednagar, Násik, East and West Khándesh, Poona and Sátára, and found them to be in good working order. No serious errors of commission or omission were discovered.

241. In the Forest Class attached to the College of Science, Poona, two students were admitted in the junior class in January 1888, and seven students out of the senior class passed the final examination in September 1887.

A. T. SHUTTLEWORTH,
Conservator of Forests, Northern Circle.

Poona, 31st October 1888.

FORM No. 49.

FOREST DEPARTMENT, BOMBAY, NORTHERN CIRCLE.

Area of Reserved Forests, 1887-88.

Division or Range.	Civil District or Territory.	Name of Forest.	Area on 1st April 1887. Acres.	Area on 1st April 1887. Equivalent in Square Miles.	Added during the year. Acres.	Excluded or transferred to other heads. Acres.	Area on 31st March 1888. Acres.	Area on 31st March 1888. Equivalent in Square Miles.	No. and Date of Notification of addition or transfer.	Remarks.
North Thána ...	Thána ...		1,82,296	284 536	.....	.....	1,82,296	284 536		
South Thána ...			2,08,395	325 395	.....	.....	2,08,395	325 395		
East Khándesh ...	Khándesh ...		4,27,596	668 76	*a* 38,280	*b* 2,044	4,63,832	724 472	*a* Nos. 8008 of 23rd Nov. 1887 and 2222 of 13th April 1887. *b* Nos. 1748 of 14th March 1888 and 2915 of 11th May 1887.	
West Khándesh ...			7,78,333	1,216 93	*c* 16,715	*d* 2,734	7,92,314	1,237 634	*c* Nos. 8501A of 14th Dec. 1887 and 137 of 9th January 1888. *d* No. 962 of 14th February 1888.	
Násik	Násik		7,10,949	1,110 549	*e* 1,411	*f* 3,565	7,08,795	1,107 315	*e* Nos. 8049/24-11-87, 8649/20-12-87, 4136/6-7-87.	
									f Nos. 3546/8-6-87, 3545/8-6-87, 8286/3-12-86, 3680/15-6-87, 8049A/24-11-87, 6935/10-10-87, 212/22-1-88, 2697/2-5-87, 927/13-2-88, and 7409/30-10-87.	
Ahmednagar ...	Ahmednagar ...		5,35,293	836 253	*g* 6,697	*h* 15,370	5,26,620	822 540	*g* Nos. 8394/14-12-87.	
									h Nos. 3198/23-5-87, 7408/31-10-87, 3732/31-10-87, 5573/23-8-87, 7640/9-11-87, 7551/7-11-87, 930/13-2-88, 6886/10-10-87, 985/14-2-88.	
Poona ...	Poona		4,62,101	722 21	*i* 3,682	.....	4,65,783	27 503	*i* Nos. 2870/9-5-87, 8106/28-11-87, 4337/11-7-87, 4330/11-7-87, 4331/11-7-87, 2869/9-5-87.	
Sátára	Sátára... ...		4,22,160	659 400	*j* 4,398	*k* 1,232	4,25,326	664 366	*j* Nos. 2862/9-5-87, 6500/27-9-87, 219/11-1-88, 8009/23-11-87, 6493 A/27-9-87, 5111 A/5-8-87, 1224/15-2-88.	
									k Nos. 5035/1-8-87, 7819/15-11-87, 7410/31-10-87.	
Sholápur	Sholápur ...		1,49,067	232 587	*l* 24,380	*m* 100	1,73,347	270 547	*l* Nos. 1419/7-3-87, 4137 A/6-7-87, 3037/16-5-87, 3873 and 3873 A/27-6-87, 4547/18-7-87.	
									m Nos. 3678/15-6-87, 5572/23-8-87, 3679/15-6-87, 7943/21-11-87.	
Surat	Surat ...		44,284	69 124	.....	.....	44,284	69 124		
Dángs	Kaira		5,76,000	900 0	.....	*n* 141,760	4,34,240	678 320		*n* Rectification of area.
Kaira	Panch Mahals...		39	0 39	.....	.....	39	0 39		
Panch Mahals ...	Ahmedabad ...		1,31,431	205 231	.....	*o* 16,494	1,14,937	179 377	Nos. 7552/1-11-87, and 1663/12-3-88.	*o* Out of this area 11 acres represent rectification of area.
Ahmedabad ...			.....	.....	*p* 21,878	.....	*q* 21,878	34 118	*p* No. 1551, dated 6th March 1888, Revenue Department.	*q* This area is not in charge of the Forest Department.
		Total ...	46,27,944	7,231 104	1,17,441	1,83,299	45,62,086	7,128 166		

Dated Poona, 31st October 1888.

A. T. SHUTTLEWORTH,

B 631—91 NC

FORM No. 49 A.

FOREST DEPARTMENT, BOMBAY, NORTHERN CIRCLE.

Area of Protected Forests, 1887-88.

Division or Range.	Civil District or Territory.	Name of Forest.	Area on 1st April 1887.		Added during the year.	Excluded or transferred to other heads.	Area on 31st March 1888.		Number and date of Notification of addition or transfer.	REMARKS.
			Acres.	Equivalent in Square Miles.	Acres.	Acres.	Acres.	Equivalent in Square Miles.		
				Sq.m. a.				Sq.m. a.		
North Thána ...	Thána		191,089	298 369	...	...	1,91,089	298 369		
South Thána ...			225,970	353 50	...	* 302	2,25,668	352 388	* Nos. 2195 and 8180, dated 12th April and 30th November 1887 respectively.	
East Khándesh ...	Khándesh ...		66,867	104 307	...	† 23,186	43,681	68 161	† Nos. 4015 and 7264 of 1st July and 25th October 1887 respectively.	‡ Ratification of area.
West Khándesh ...			1,24,777	194 617	‡ 174	...	1,24,951	195 151		
Násik	Násik		...	.....	...	...	... ...	.....		
Ahmednagar ...	Ahmednagar ...		7,154	11 114	...	...	7,154	11 114		
Poona	Poona		...	.....	...	...	.....	.. ...		
Sátára	Sátára		17	0 17	...	...	17	0 17		
Sholápur	Sholápur ...		...	.....	...	...	.....	.....	§ Nos. 1663A/12-3-88, 1994/28-388, 2698/2-5-87.	
Surat	Surat		...	.....	...	...	.....	.....		
Dángs			...	.....	...	...	.....	.....		
Kaira	Kaira		...	.....	...	...	.....	.....		
Panch Mahals ...	Panch Mahals ...		75,627	118 107	§ 16,840	‖ 2,614	89,853	140 253	‖ No. 1663B/12-3-88	
		Total...	6,91,501.	10,80 301	17,014	26,102	6,82,413	1,066 173		

Dated Poona, 31st October 1888.

A. T. SHUTTLEWORTH,
Conservator of Forests, Northern Circle.

FORM No. 50.

FOREST DEPARTMENT, BOMBAY, NORTHERN CIRCLE.

Register of Breaches of Forest Rules during 1887-88.

I.—Prosecutions in the Courts of Law.

Forest Division and Civil District.	Cases pending from 1886-87.	New Cases of the Year.					Total Cases.	Disposed of during the Year.						Cases pending at close of year.
		Injury to Forest by fire.	Unauthrized felling or appropriation of wood and minor Forest produce.	Grazing without permission or in tracts in which grazing is prohibited.	Other Offences.	Total new Cases of the year.		Convictions.		Acquittals.		Total.		
								Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	
North Thána	...	1	67	...	...	68	68	39	98	22	24	61	122	7
South Thána	13	3	179	...	9	191	204	151	312	34	90	185	402	19
East Khándesh	3	...	11	4	5	20	23	10	26	5	26	15	52	8
West Khándesh	38	13	35	4	20	72	110	51	126	20	51	71	177	39
Násik	6	1	71	5	6	83	89	60	139	19	80	79	219	10
Ahmednagar	14	...	10	26	12	48	62	39	96	14	34	53	130	9
Poona	3	...	32	19	12	63	66	46	82	20	79	66	161	...
Sátára	2	...	36	9	5	50	52	34	59	10	28	44	87	8
Sholápur	6	...	6	67	8	81	87	54	129	23	60	77	189	10
Surat	...	...	19	10	6	35	35	30	64	3	4	33	68	2
Panch Mahals	...	...	25	...	...	25	25	24	66	1	4	25	70	...
Total ...	85	18	491	144	83	736	821	538	1,197	171	480	709	1,677	112

Dated Poona, 31st October 1888.

A. T. SHUTTLEWORTH,
Conservator of Forests, Northern Circle.

FORM No. 51.

FOREST DEPARTMENT, BOMBAY, NORTHERN CIRCLE.

Area of Forest Tracts protected from Fire during the Dry Season, 1888, to accompany Report for 1887-88.

Division.	Forest Tracts.	Year in which protection commenced.	Area actually protected up to 15th June 1887.	During the Dry Season of 1888.			Cost during the Season.	Remarks.
				Area attempted to be protected.	Failures.	Actually protected.		
			Acres.	Acres.	Acres.	Acres.	Rs.	
North Thána ...	Sálsette	1878-79 ...	16,977	17,243	122	17,121	68	
	Bassien	,, ...	37,393	41,393	3,593	37,800	44	
	Máhim	,, ...	98,363	1,01,407	4,225	97,182	283	
	Dáhánu	,, ...	1,24,218	1,26,673	1,935	1,24,738	54	
	Umbargaon	,, ...	38,080	38,717	1,000	37,717	6	
	Váda	,, ...	33,159	48,560	8,973	39,587	65	
	Total ...		3,48,190	3,73,993	19,848	3,54,145	520	
South Thána ...	Bhiwndi	1878-79 ...	43,769	46,152	3,160	42,992	7	
	Sháhápur	,, ...	83,070	70,178	8,242	61,936	19	
	Khardi	,, ...	58,519	80,425	30	80,395	...	
	Mokháda	,, ...	31,533	59,129	829	58,300	...	
	Kalyán	,, ...	32,853	35,287	3,778	31,509	...	
	Murbád	,, ...	87,655	90,840	697	90,143	...	
	Karjat	,, ...	23,747	31,025	45	30,980	1	
	Khálápur	,, ...	17,705	21,327	340	20,987	...	
	Total ...		3,78,851	4,34,363	17,121	4,17,242	27	
East Khándesh...	Amalner	1878-79 ...	690	2,058	12	2,046	...	
	Páchora	,, ...	21,959	25,414	...	25,414	...	
	Bhadgaon							
	Bhusával	,, ...	3,860	64,459	2,307	62,152	...	
	Edalabad							
	Chálisgaon	,, ...	15,090	62,485	110	62,375	...	
	Chopda	,, ..	3,31,551	1,14,832	8,720	1,06,112	16	
	Erandol...	,, ...	18,502	12,169	...	12,169	...	
	Jalgaon	,, ...	9,829	21,089	301	20,788	...	
	Jámner	,, ...	40,835	18,705	...	18,705	...	
	Ráver							
	Sávda	,, ...	29,757	1,86,302	4,797	1,81,505	62	
	Yával							
	Total ...		4,72,073	5,07,513	16,247	4,91,266	78	
West Khándesh .	Akrani	1878-79 ...	1,24,632	1,66,176	6,575	1,59,601	...	
	Dhulia	,, ...	1,11,668	1,16,580	3,841	1,12,739	...	
	Nandurbár	,, ...	63,892	72,747	39,943	32,804	...	
	Nizámpur	,, ...	1,35,041	1,40,690	10,588	1,30,102	...	
	Pimpalner	,, ..	55,439	70,570	5,697	64,873	...	
	Sháháda	,, ...	51,221	85,100	75,000	10,100	...	
	Shirpur	,, ..	18,155	3,49,000	2,00,000	1,49,000	...	
	Sindkheda	,, ...	1,173	24,348	380	23,968	...	
	Navápur	,, ...	67,400	58,930	58,930	Nil.	...	
	Taloda	,, ...	95,120	75,500	75,500	Nil	...	
	Total ...		7,23,741	11,59,641	4,76,454	6,83,187	...	
Násik	Násik	1878-79 ...	30,305	31,482	493	30,989	3	
	Igatpuri	,, ...	36,998	37,254	136	37,118	...	
	Sinnar	,, ...	39,500	39,860	45	39,815	...	
	Dindori	,, ...	18,253	20,230	146	20,084	...	
	Niphád	,, ...	3,416	3,446	...	3,446	...	
	Chándor	,, ...	24,948	24,939	...	24,939	...	
	Yeola	,, ...	31,342	31,495	163	31,332	...	
	Báglán	,, ...	1,17,815	1,09,338	566	1,08,772	...	
	Kalvan	,, ...	1,07,663	1,24,220	462	1,23,758	...	
	Peint	,, ...	59,860	57,544	...	57,544	...	
	Málegaon	,, ...	1,21,914	1,07,067	310	1,06,757	...	
	Nándgaon	,, ...	1,06,725	1,21,920	12	1,21,908	...	
	Total ...		6,98,739	7,08,795	2,333	7,06,462	3	
Ahmednagar	Nagar	1878-79 ...	40,440	40,562	660	39,902	...	
	Párner	,, ...	69,568	69,717	6	69,711	...	
	Shrigonda	,, ...	42,197	43,319	172	43,147	...	
	Karjat	,, ...	49,737	50,006	273	49,733	...	
	Jámkhed	,, ...	38,793	39,218	419	38,799	...	
	Shevgaon	,, ..	26,858	27,174	30	27,144	...	
	Nevása	,, ...	20,520	18,430	5	18,425	...	
	Ráhuri	,, ...	48,646	48,649	16	48,633	...	
	Kopargaon	,, ...	5,102	3,941	...	3,941	...	
	Sangamner	,, ...	85,622	76,121	6	76,115	...	
	Akola	,, ...	1,13,250	1,11,086	1,348	1,09,738	13	
	Total ...		5,40,733	5,28,223	2,935	5,25,288	13	

FORM No. 51—*continued.*

Division.	Forest Tracts.	Year in which protection commenced.	Area actually protected up to 15th June 1887.	During the Dry Season of 1888.			Cost during the Season.	Remarks.
				Area attempted to be protected.	Failures.	Actually protected.		
			Acres.	Acres.	Acres.	Acres.	Rs.	
Poona	Junnar	1878-79 ...	55,038	55,268	225	55,043	...	
	Indápur...	,, ...	59,652	62,544	13	62,531	...	
	Khed	,, ...	54,716	55,332	1,154	54,178	...	
	Ambegaon	,, ...	43,478	43,479	172	43,307	...	
	Sirúr	,, ..	19,970	20,275	2	20,273	...	
	Purandhar	,, ...	25,394	25,423	24	25,399	1	
	Bhimthadi	,, ..	53,717	53,826	24	53,802	...	
	Bárámati	,, ...	19,726	20,031	60	19,971	...	
	Haveli	,, ...	49,658	50,009	286	49,723	...	
	Mulshi	,, ...	25,234	25,277	172	25,105	...	
	Mával	,, ...	53,827	54,319	297	54,022	...	
	Total ...		4,60,410	4,65,783	2,429	4,63,354	1	
Satára	Mahábaleshvar ...	1878-79 ...	40,888	41,397	9	41,388	...	
	Mán	,, ...	56,152	56,156	1	56,155	...	
	Khatáv	,, ...	16,257	16,503	...	16,503	...	
	Karád	,, ...	35,645	35,986	20	35,966	...	
	Wái	,, ...	24,776	24,892	14	24,878	...	
	Koregaon	,, ...	28,972	28,772	118	28,654	...	
	Sátára	,, ...	22,203	22,263	...	22,263	...	
	Tásgaon...	,, ...	12,439	13,573	...	13,573	...	
	Khandála	,, ...	14,194	14,194	5	14,189	...	
	Jávli	,, ...	50,389	50,802	20	50,782	...	
	Khánápur	,, ...	29,665	30,427	...	30,427	...	
	Válva	,, ...	26,790	26,790	10	26,780	...	
	Pátan	,, ...	61,213	63,588	796	62,792	...	
	Total ...		4,19,583	4,25,343	993	4,24,350	...	
Sholápur... ...	Sholápur	1878-79 ...	35,324	37,886	625	37,261	...	
	Bársi	,, ...	8,536	8,536	60	8,476	...	
	Mádha	,, ...	30,428	31,383	704	30,679	...	
	Karmála	,, ...	42,167	50,489	3	50,486	...	
	Pandharpur	,, ...	5,707	5,873	...	5,873	...	
	Sángola	,, ...	3,376	17,780	...	17,780	...	
	Málsiras	,, ...	21,392	21,432	1	21,431	...	
	Total ...		1,46,930	1,73,379	1,393	1,71,986	...	
Surat	Mándvi	1878-79 ...	39,617	41,480	7,094	34,386	...	
	Dángs	,, ...	5,45,225	5,76,000	19,200	5,56,800	...	
	Chikhli	,, ...	115	826	710	116	...	
	Balsár and Párdi ...	,, ...	1,529	1,529	25	1,504	...	
	Bárdoli	,, ...	451	451	...	451	...	
	Total ...		5,86,937	6,20,286	27,029	5,93,257	...	
Panch Mahals ...	Godhra	1878-79 ...	85,870	83,821	28,877	54,944	...	
	Kálol	,, ...	16,723	17,565	3,979	13,586	...	
	Hálol	,, ...	19,264	29,994	6,247	23,747	...	
	Dohad	,, ...	45,706	46,538	321	46,217	...	
	Jhálod	,, ...	24,585	26,872	70	26,802	...	
	Total ...		1,92,148	2,04,790	39,494	1,65,296	...	
	Grand Total ...		49,68,335	56,02,109	6,06,276	49,95,333	642	

A. T. SHUTTLEWORTH,
Conservator of Forests, Northern Circle.

Poona, 31st October 1888.

FORM No. 52.

Forest Department, Bombay, Northern Circle.

Area of Plantations, 1887-88.

Division.	Name of Plantation.	Area in Acres.				Receipts.	Charges.	Remarks.
		On 1st April 1887.	Added during the year.	Excluded during the year.	Area on 31st March 1888.	Of the year.		
	Regular Plantations.	Acres.	Acres.	Acres.	Acres.	Rs.	Rs.	
North Thána ...	Sálsette	48	59	...	107	...	34	
	Bassein	1	...	...	1	...	1	
	Máhim	1,880	...	..	1,880	....	97	
	Dáhánu	2	...	...	2	...	...	
	Váda	85	7	...	92	...	96	
	Umbargaon	127	...	...	127	...	...	
	Total ...	2,143	66	...	2,209	...	228	
South Thána ...	Bhiwndi	261	...	...	261	...	...	
	Mokháda	5	...	...	5	...	...	
	Karjat	5	44	...	49	...	64	
	Total ...	271	44	...	315	...	64	
East Khándesh ...	.....		Nil.					
West Khándesh.	.....		Nil.					
Násik	.....		Nil.					
Ahmednagar ...	Nagar Dongargáon ...	142	...	...	142	..	415	
Poona	.....		Nil.					
Sátára	Khatáv	183	24	...	207	...	128	
	Koregaon	227	...	...	227	...	216	
	Karád	252	...	...	252	...	17	
	Khandála	16	15	...	31	...	44	
	Válva	33	36	...	69	...	31	
	Sátára	23	5	...	28	...	66	
	Wái	230	...	25	205	...	6	
	Mán	48	...	...	48	...	76	
	Jávli	28	...	...	28	...	4	
	Mahábaleshvar	333	98	46	385	...	226	
	Tásgaon	178	118	...	296	...	53	
	Pátan	64	50	...	114	...	54	
	Khánápur	35	6	...	41	...	12	
	Shirála	...	26	...	26	...	3	
	Total ...	1,650	378	71	1,957	...	936	
Sholápur ...	.....		Nil.					
Surat	.....		Nil.					
Panch Mahals ...	.....		Nil.					
	Total Regular Plantations...	4,206	488	71	4,623	...	1,643	
	Cultural Operations.							
North Thána ...	Sálsette	...	155	...	155	...	...	
	Bassein	...	33	...	33	...	...	
	Máhim	...	88	...	88	...	...	
	Dáhánu	...	55	...	55	...	...	
	Umbargaon	...	39	...	39	...	...	
	Váda	...	60	...	60	...	...	
	Total ...	...	430	...	430	...	...	
South Thána ...	Bhiwndi	332	60	...	392	...	17	
	Sháhápur	151	43	...	194	...	2	
	Khardi	64	55	...	119	...	3	
	Mokháda	64	30	...	94	...	2	
	Kalyán	102	160	...	262	...	51	
	Murbád	132	544	...	676	...	2	
	Karjat	185	...	...	185	...	3	
	Khálápur	555	76	...	631	...	19	
	Total ...	1,585	968	...	2,553	...	97	
East Khándesh.	Amalner	2,094	25	...	2,119	...	...	
	Bhadgaon	272	...	...	272	...	...	
	Bhusával	1,590	16	...	1,606	...	...	
	Chálisgaon	425	32	...	457	...	...	
	Chopda	355	60	...	415	...	...	
	Edalabad	340	20	...	360	...	...	
	Erandol	4,965	19	...	4,984	...	...	
	Jalgaon	373	31	...	404	...	...	
	Jámner	516	101	...	617	...	...	

FORM No. 52—*continued.*

Division.	Name of Plantation.	Area in Acres. On 1st April 1887.	Area in Acres. Added during the year.	Area in Acres. Excluded during the year.	Area in Acres. Area on 31st March 1888.	Receipts. Of the year.	Charges. Of the year.	Remarks
	Cultural Operations—continued.	Acres.	Acres.	Acres.	Acres.	Rs.	Rs.	
East Khándesh *-continued.*	Páchora	25	5	...	30	...	...	
	Ráver	89	11	...	100	...	...	
	Sávda	209	27	...	236	...	...	
	Yával	60	35	..	95	...	...	
	Total	11,313	382	...	11,695	...	...	
West Khándesh.	Akráni	95	43	...	138	...	....	
	Dhulia	2,613	515	...	3,128	...	148	
	Nandurbár	648	50	...	698	...	...	
	Navápur	1,031	315	...	1,346	...	...	
	Nizámpur	446	...	..	446	...	5	
	Pimpalner	1,384	...	...	1,384	..	47	
	Sháháda	140	3,217	...	3,357	...	...	
	Shirpur	1,623	72	...	1,695	...	...	
	Taloda	688	162	...	850	...	...	
	Virdel	4,674	1,121	...	5,795	...	129	
	Total	13,342	5,495	...	18,837	...	329	
Násik	Násik	61	...	...	61	...	107	
	Igatpuri	...	100	15	85	...	38	
	Chándvad	150	160	150	160	...	49	
	Sinnar	86	208	...	294	...	157	
	Yeola	1,433	186	17	1,602	...	499	
	Niphád	96	321	...	417	...	417	
	Dindori	52	67	...	119	..	85	
	Málegaon	769	465	...	1,234	...	506	
	Nándgaon	243	23	243	23	...	3	
	Báglán	...	50	...	50	...	46	
	Kalvan	...	15	...	15	...	4	
	Total	2,890	1,595	425	4,060	...	1,911	
Ahmednagar ...	Nagar	402	269	...	671	...	118	
	Párner	537	19	...	556	...	54	
	Shrígonda	687	60	...	747	...	38	
	Karjat	138	94	...	232	...	45	
	Jámkhed	1,530	185	...	1,715	...	50	
	Shevgaon	407	37	...	444	...	48	
	Nevása	182	3	...	185	...	54	
	Ráhuri	130	1	...	131	...	70	
	Kopargaon	231	54	...	285	...	57	
	Sangamner	1,434	27	...	1,461	...	31	
	Akola	80	6	...	86	..	7	
	Total	5,758	755	...	6,513	...	572	
Poona	Junnar	965	...	...	965	...	10	
	Indápur	2,401	185	...	2,586	...	50	
	Khed...	6,148	40	...	6,188	...	24	
	A'mbegaon	2,280	...	...	2,280	..	2	
	Sirur...	5,655	...	...	5,655	...	4	
	Purandhar	5,918	32	...	5,950	...	50	
	Bhimthadi	3,324	207	...	3,531	...	48	
	Bárámati	1,904	98	...	2,002	...	72	
	Haveli	1,384	...	...	1,384	...	...	
	Mulshi	849	...	...	849	...	...	
	Mával	1,116	3	...	1,119	...	18	
	Plantation by Forest Guards	72	100	...	172	...	...	
	Total	32,016	665	...	32,681	...	278	
Satára... ...	Mahábaleshvar	3,524	728	2,217	2,035	...	...	
	Shirála	84	...	...	84	...	...	
	Sátára	398	579	...	977	...	...	
	Mán...	187	2,066	...	2,253	...	...	
	Válva	1,824	10	..	1,834	...	...	
	Khatáv	962	123	...	1,085	...	...	
	Karád	6,516	6,602	...	13,118	...	...	
	Tásgaon	903	120	...	1,023	...	...	
	Khánápur	1,524	862	...	2,386	...	...	
	Khandála	2,908	830	...	3,738	...	...	
	Pátan	1,444	2,489	...	3,933	...	...	
	Jávli ...	5,369	862	...	6,231	...	...	
	Wái ...	17,380	354	...	17,734	...	...	
	Koregaon	5,342	3,969	...	9,311	...	...	
	Total	48,365	19,594	2,217	65,742	...	...	

FORM No. 52—*concluded.*

Division.	Name of Plantation.	Area in Acres. On 1st April 1887.	Added during the year.	Excluded during the year.	Area on 31st March 1888.	Receipts. Of the year.	Charges. Of the year.	Remarks.
		Acres.	Acres.	Acres.	Acres.		Rs.	
Sholápur ...	Sholápur	1,219	186	...	1,405	...	350	
	Bársi	171	151	...	322	...	172	
	Mádhá	4,743	130	...	4,873	...	217	
	Karmála	1,588	140	...	1,728	...	453	
	Pandharpur	1,968	143	...	2,111	..	146	
	Sángola	261	111	..	372	...	124	
	Málsiras	846	147	...	993	...	202	
	Total ...	10,796	1,008	...	11,804	...	1,664	
Surat	Dángs	980	735	...	1,715	...	16	
	Chorási	22	...	...	22	...	...	
	Balsár	33	110	...	143	...	20	
	Párdi	32	2	...	34	...	...	
	Chikhli	124	9	...	133	...	...	
	Mándvi	367	201	...	568	...	...	
	Railway strips from Vásad to Anand and Nadiád to river Shedi	5 miles.	...	...	5 miles.	...	...	
	Total ...	1,558 5 miles.	1,057	...	2,615 5 miles.	...	66	
Panch Mahals ...	Godhra	246	78	246	78	...	...	
	Kálol	44	16	44	16	...	...	
	Hálol	50	19	50	19	..	...	
	Dohad	44	22	44	22	...	...	
	Jhálod	63	13	63	13	...	...	
	Total ...	447	148	447	148	...	...	
	Total Cultural Operations ...	1,28,070 5 miles.	32,097	3,089	1,57,078 5 miles.	...	4,887	
	Grand Total ...	1,32,276 5 miles.	32,585	3,160	1,61,701	...	6,530	

A. T. SHUTTLEWORTH,

Conservator of Forests, Northern Circle.

Poona, 31st October 1888.

FORM No. 53.

Forest Department, Bombay, Northern Circle.

Trees felled by Government agency during the year 1887-88.
(Selection fellings.)

Division.	Trees felled.		Remarks.
	Description.	Number.	
North Thána	.....	...	There are no selection fellings in these Divisions.
South Thána	.....	...	
East Khándesh	.....	...	
West Khándesh	.....	...	
Násik	.....	...	
Ahmednagar	Bábul	527	
	Bor	38	
	Teak...	19,312	
	Jambul	5,947	
	Total ...	25,824	
Poona	.....	...	There are no selection fellings in these Divisions.
Sátára	.....	...	
Sholápur	.....	...	
Surat	Teak	12,191	
	Sadada	917	
	Bábul	367	
	Junglewood ...	7	
	Total ...	13,482	
Panch Mahals...	.....	...	There is no selection fellings in this Division.
	Grand Total ...	39,306	
	Abstract of the Circle.		
	Teak	31,503	
	Bábul	894	
	Jambul	5,947	
	Sadada	917	
	Junglewood	7	
	Bor	38	
	Total ...	39,306	

A. T. SHUTTLEWORTH,
Conservator of Forests, Northern Circle.

Poona, 31st October 1888.

FORM No. 54.

Forest Department, Bombay, Northern Circle.

Outturn of Timber and Firewood during the year 1887-88.

Division.	Description of Materials.	Outturn in Cubic Feet.							Remarks.
		Selection Fellings.	Clearances.	Thinnings.	Total.	Removed by			
						Government Agency.	Purchasers.	Free Grants.	Right-holders.	
North Thána.	Teak .. .. Cubic feet.	...	...	54·94	54·94	...	54·94	...	...	
	Do. pieces	...	...	1,86,167	1,86,167	60,290	1,25,877	...	...	
	Junglewood do.	...	...	68,271	68,271	4,360	63,911	...	...	
	Firewood . Khandies.	...	...	92,587	92,587	12,682	79,905	...	...	
	Bámbus	...	...	4,83,057	4,83,057	...	4,83,057	...	...	
	Do. ... Cart-loads.	...	...	8,244	8,244	...	8,244	...	...	
South Thána.	Teak pieces	...	1,25,355	...	1,25,355	32,434	92,080	841	...	
	Sisu do.	...	24	...	24	24	...	...	...	
	Junglewood pieces	...	6,050	...	6,050	3,220	2,403	427	...	
	Firewood ... Khandies	...	4,795	...	4,795	3,577	1,218	...	...	
	Bámbus	...	4,888	...	4,888	236	4,652	...	...	
	Do. ... Cart-loads.	...	187	...	187	...	187	...	...	
	Do. ... Head-loads.	...	3,147	...	3,147	23	3,124	...	...	
East Khándesh.	Teak rafters	...	...	30,730	30,730	30,405	...	325	...	
	Do. .. Cart-loads.	...	...	10	10	...	10	...	...	
	Do. ...Bullock-loads.	...	...	1	1	...	1	...	...	
	Do . Head-loads.	...	...	236	236	...	236	...	...	
	Junglewood pieces... ...	...	...	965	965	570	395	..	...	
	Do. ... Cart-loads.	...	...	1,410	1,410	...	...	...	...	
	Do. ...Buffalo-loads.	...	...	406	406	...	406	...	...	
	Do. .. Bullock-loads	...	...	1,210	1,210	...	1,210	...	...	
	Do. ... Head-loads	...	...	4,260	4,260	...	4,260	...	...	
	Firewood ... Khandies	...	...	6,085	6,085	6,085	...	...	...	
	Do. ... Cart-loads.	...	...	24,953	24,953	51	24,902	...	...	
	Do. ... Head-loads.	...	...	5,234	5,234	...	5,234	...	...	
	Do. ...Bullock-loads	...	...	1,909	1,909	...	1,909	...	...	
	Do. ...Donkey loads	...	...	1,035	1,035	...	1,035	...	...	
	Do. ... Horse-loads.	...	...	1	1	...	1	...	...	
	Bámbus	...	...	1,93,478	1,93,478	...	1,93,478	...	...	
	Do. ... Head-loads.	..	...	12,498	12,498	...	12,498	...	...	
	Do. ...Bullock-loads	...	...	43	43	...	43	...	...	
West Khándesh.	Teak rafters	...	...	35,641	35,641	35,521	...	120	...	
	Do. pieces	...	...	32,465	32,465	31,231	146	26	...	No. 1,062 remained unsold.
	Do. ... ... Cart-loads.	...	...	516	516	...	516	...	...	
	Do. ... ... Head-loads.	...	...	424	424	...	424	...	...	
	Do. ... Donkey loads.	...	...	1	1	...	1	...	...	
	Junglewood pieces	..	...	6,096	6,096	...	157	5,939	...	
	Firewood ... Khandies.	...	...	21,825	21,825	4,443	17,322	...	...	60 Khandies remained unsold.
	Charcoal ... Do. ...	...	...	214	214	...	214	...	...	
Násik.	Teak, green... Khandies.	...	568	...	568	...	568	...	..	
	Do. rafters.	...	1,68,924	...	1,68,924	88,418	2,064	1,025	...	
	Do. logs	...	1,940	...	1,940	915	...	1,025	...	77,417 remained unsold.
	Do. pieces	...	9,319	...	9,319	...	9,319	...	...	
	Tiwas, green Khandies.	...	149	...	149	...	149	...	...	
	Sisu ... ... Do.	...	2	...	2	...	2	...	...	
	Ain ... .. Do.	...	32	..	32	...	32	...	...	
	Hed ... ... Do.	...	346	...	346	...	346	...	...	
	Kheir ... Do.	...	133	...	133	...	133	...	...	
	Sadada, green Do.	...	2	...	2	...	2	...	...	
	Junglewood... Do.	...	96	...	96	...	96	...	...	
	Do. pieces ...	...	11,856	...	11,856	1,571	6,734	3,551	...	
	Firewood .. Khandies.	...	5,083	...	5,083	3,805	23	107	...	1,148Khandies remained unsold.
	Do. ... Cart-loads.	...	1,208	...	1,208	...	1,206	2	...	
	Do ... Head-loads.	..	6,024	...	6,024	...	6,024	...	...	
	Bámbus	...	2,36,245	...	2,36,245	...	2,36,245	...	...	
	Do, ... Cart-loads.	...	136	...	136	...	134	2	...	
	Do. ... Head-loads.	...	1,133	...	1,133	...	1,133	...	...	
Ahmednagar.	Teak rafters	52,146	...	...	52,146	55,238	...	...	...	3,092 rafters from last year.
	Jambul do.	15,208	...	...	15,208	19,431	...	...	...	4,223 do.
	Firewood ... Khandies.	1,880	...	...	1,880	1,927	...	...	...	47Khandies do.
	Bámbus	...	28,839	...	28,839	...	28,839	...	...	

FORM No. 54—*continued.*

Division.	Description of Materials.	Outturn in Cubic Feet.								Remarks.
		Selection Fellings.	Clearances.	Thinnings.	Total.	Removed by				
						Government Agency.	Purchasers.	Free Grants.	Right-holders.	
Poona.	Teak rafters	...	...	1,02,209	1,02,209	1,01,936	47	226	...	
	Junglewood rafters ...	...	...	375	375	...	125	250	...	
	Firewood ... Khandies.	...	...	10,126	10,126	9,498	449	179	...	
	Bámbus	...	...	1,07,096	1,07,096	1,07,096	...	...	...	
Sátára.	Teak trees	...	1,975	...	1,975	...	1,975	...	...	
	Do. rafters	...	...	52,441	52,441	51,850	591	...	..	
	Junglewood rafters ...	...	...	10,176	10,176	5,475	3,787	914	...	
	Firewood ... Khandies.	...	...	3,048	3,048	2,906	142	...	...	
	Do. ... Head-loads.	...	...	185	185	...	185	...	...	
	Charcoal ... Khandies.	...	...	12	12	12	...	...	...	
	Bámbus	...	...	68,809	68,809	13,949	...	...	...	54,860 remained unsold.
	Do. ... Head-loads.	...	...	2,945	2,945	...	2,945	...	...	
Sholápur	Sandalwood trees	...	283	...	283	...	283	...	...	
	Junglewood pieces	...	...	26	26	26	...	...	...	
	Firewood ... Khandies.	...	...	744	744	452	292	...	...	
	Bámbus	...	...	35	35	35	...	...	...	
Surat.	Teak, green... Khandies.	3,631	...	...	3,631	1,565	829	...	...	1,237 remained unsold.
	Do. pieces	20,734	...	...	20,734	...	1,428	...	...	19,306 do.
	Do. ... Cart-loads.	31	...	...	31	...	31	...	...	
	Ain ... ... Khandies.	166	...	...	166	108	58	...	...	
	Do. pieces	450	...	...	450	...	14	...	...	436 do.
	Beo ... ... Khandies.	38	...	...	38	38	..	...	...	
	Kheir ... Do.	356	...	...	356	106	250	...	...	
	Do. pieces....	3	...	...	3	...	3	...	...	
	Tanach ... Khandies.	366	...	...	366	151	215	...	..	
	Haladwan ... Do.	138	...	...	138	6	132	...	...	
	Junglewood pieces.... ...	22,964	...	...	22,964	...	22,268	...	...	696 do.
	Do. ... Cart-loads.	22	...	...	22	...	22	...	...	
	Firewood ... Khandies.	149	...	...	149	...	30	...	...	119 do.
	Do. ... Tons.	8	...	...	8	...	...	...	...	8 do.
	Do. ... Cart-loads.	3,065	...	...	3,065	...	3,065	...	...	
	Bámbus	7,35,296	...	...	7,35,296	...	7,35,296	...	...	
Panch Maháls.	Teak rafters	...	...	1,03,120	1,03,120	3,098	86,892	13,130	...	
	Do. pieces	...	...	74,870	74,870	124	74,316	430	...	
	Do. Gujas 10½...Cubic feet.	...	...	81	81	...	36	45	...	
	Do. .. Cart-loads.	...	...	1	1	...	...	1	...	
	Junglewood rafters ...	...	...	1,095	1,095	69	26	1,000	...	
	Do. pieces.	...	...	1,621	1,621	89	1,408	124	...	
	Do. ... Cart-loads.	...	...	9	9	...	...	9	...	
	Do. Gujas 10½...C. feet	...	...	8	8	...	...	8	...	
	Firewood ... Khandies.	...	...	9,756	9,756	4,993	4,763	...	...	
	Do. ... Cart-loads.	...	...	1,833	1,833	16	1,817	...	...	
	Do. ... Head-loads.	...	...	15	15	...	15	...	...	
	Charcoal ... Cart-loads.	...	...	3	3	...	3	...	...	
	Do. ... Head-loads.	...	...	87	87	...	87	...	...	
	Bámbus	...	...	44,334	44,334	1,094	40,590	2,650	...	
	Canes ... Cart-loads.	...	...	2	2	...	2	...	..	

Poona, 31st October 1888.

A. T. SHUTTLEWORTH,
Conservator of Forests, Northern Circle.

FORM No. 55.

Forest Department, Bombay, Northern Circle.

Outturn of Minor Forest Produce.

Division.	Description of Produce.	Produce removed or utilized.									
		By Government Agency.		By Purchasers.		By Free Grants.		By Right-holders.		Total.	
		Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
			s.		Rs.		Rs.		Rs.		Rs.
North Thána.	Apta, temburni, pallas and brab tree leaves	..	..	..	3,249	..	..	..	..	..	3,249
	Shembi ain bark..Khandies.	185	853	..	114	..	..	..	..	185	967
	Bháwá pods	..	..	..	96	..	..	..	..	..	96
	Brab tree fruits	..	..	..	79	..	..	..	..	..	79
	Gums	..	..	..	342	..	..	..	..	..	342
	Stones .. .. Cart-loads.	..	.. 40	..	10	..	..	..	..	.. 40	10
	Karvi .. .. Do.	..	..	2,069	517	..	..	..	..	2,069	517
	Do. .. ..Head-loads.	..	..	2,014	68	..	..	..	..	2,014	68
	Ráb material .. Cart-loads..	..	..	38	3	..	..	..	..	38	3
	Total ..	..	853	..	4,478	..	..	..	..	..	5,331
South Thána.	Hirda .. .. Khandies.	204	2,448	...	..	..	..	..	..	204	2,448
	Karvi .. Cart-loads.	..	..	1,196	342	..	..	..	..	1,196	342
	Do. .. Head-loads.	..	..	1,140	37	..	..	..	..	1,140	37
	Apta, teak, temburni leaves.	..	..	..	2,159	..	..	..	..	..	2,159
	Chilhari and shembi bark, Shikakái	..	..	..	30	..	..	..	..	..	30
	Thorns .. Cart-loads.	..	..	29	7	..	..	..	..	29	7
	Do. .. Head-loads.	..	..	5	1	..	..	..	..	5	1
	Stones .. Cart-loads.	..	..	7	1	..	..	..	..	7	1
	Mowra flowers and fruits ..	..	..	..	125	..	..	..	..	..	125
	Total ..	..	2,448	..	2,702	..	..	..	..	..	5,150
East Khándesh.	Stones .. .. No.	..	..	46	3	..	..	..	..	46	3
	Do. .. Cart-loads.	..	..	1,368	147	..	..	..	..	1,368	147
	Lime stones.. Do.	..	..	104	8	..	..	..	..	104	8
	Earth.. .. Do.	..	..	4	1	..	..	..	..	4	1
	Roshagrass Stills .. No.	..	..	4	52	..	..	..	..	4	52
	Mango fruits	..	..	..	3	..	..	..	..	..	3
	Total ..	..	..	..	214	..	..	..	..	..	214
West Khándesh.	Roshagrass Stills	..	..	185	8,103	..	..	..	..	185	8,103
	Grass .. .. Cart-loads.	..	..	259	32	..	..	..	..	259	32
	Reed .. .. Do. ..	..	..	1,016	167	..	..	..	..	1,016	167
	Thorns .. Do. ..	..	..	881	95	..	..	..	..	881	95
	Stones .. Do. ..	..	..	1,653	295	..	..	..	..	1,653	295
	Kunkar .. Do. ..	..	..	282	48	..	..	..	..	282	48
	Tarwad	..	..	..	10	..	..	..	..	..	10
	Manure .. Cart-loads.	..	..	..	217	..	..	..	..	..	217
	Mango fruits	..	..	..	45	..	..	..	..	..	45
	Anjan leaves	..	..	..	48	..	..	..	..	..	48
	Karvi .. Cart-loads.	..	..	13	2	..	..	..	..	13	2
	Total ..	..	..	..	9,062	..	..	..	..	..	9,062
Násik.	Stone heaps and brasses ..	..	..	214	54	..	..	..	..	214	54
	Do. .. ..Cubic feet.	..	..	21,976	95	..	..	..	..	21,976	95
	Do. .. ..Cart-loads.	..	..	264	54	840	105	..	..	1,104	159
	Do. .. ..Quarry ..	..	..	1	10	..	..	..	..	1	10
	Tarwad .. .. Bark.	..	..	..	47	..	..	..	..	..	47
	Manure .. ..Cart-loads.	..	..	234	82	..	..	..	..	234	82
	Karvi .. Head-loads.	9	..	18,600	288	..	..	..	..	18,609	288
	Do. .. ..Cart-loads.	..	..	2	1	..	..	..	..	2	1
	Head loads, cart-loads and bullock-loads of Ráb materials..	..	..	1,219	108	..	..	..	..	1,219	108
	Thorns .. Head-loads.	..	..	1,789	469	25	2	..	..	1,814	471
	Grass oil furnaces	..	..	134	726	..	..	..	..	134	726
	Catechu furnaces	..	..	60	922	..	..	..	..	60	922
	Do. do.	..	..	..	10	..	..	..	..	..	10
	Earth brasses	..	..	132	2	..	..	..	..	132	2
	Do. .. ..Cart-loads.	..	..	..	..	125	8	..	..	125	8
	Bámbu articles, &c. ..	..	..	213	4	..	..	..	..	213	4
	Grass and grazing by auction	..	..	..	9,032	..	..	..	..	..	9,032
	Grazing by fee system ..	..	..	..	27,338	..	..	..	..	..	27,338
	Hirda .. .. Khandies.	96	1,062	..	..	..	..	..	..	..	1,062
	Damages for karvi leaves, &c.	..	..	..	24	..	..	..	..	..	24
	Total ..	..	1,062	..	39,266	..	115	..	..	..	40,443
Ahmednagar.	Hirda .. ..Khandies .	170	2,501	..	..	..	..	..	..	170	2,501
	Grass and grazing by auction	..	..	..	5,647	..	..	..	..	..	5,647
	Grazing by fee system ..	..	..	..	21,540	..	..	..	..	..	21,540
	Stones .. Cart-loads.	..	..	7,410	467	..	..	..	..	7,410	467
	Fruits of mango and various trees	..	..	..	121	..	..	..	..	..	121
	Téak leaves	..	..	..	3	..	..	..	..	..	3
	Karvi .. Head-loads.	..	..	2,073	68	..	..	..	..	2,073	68
	Earth	..	..	..	63	..	..	..	..	..	63
	Reeds	..	..	..	5	..	..	..	..	..	5
	Tarwad	..	..	..	654	..	..	..	..	..	654
	Total ..	..	2,501	..	28,568	..	..	..	..	..	31,069

FORM No. 55—*continued.*

Division.	Description of Produce.	Produce removed or utilized.									
		By Government Agency.		By Purchasers.		By Free Grants.		By Right-holders.		Total.	
		Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
			Rs.		Rs.		Rs.		Rs.		Rs.
Poona.	Hirda .. .. Khandies.	142	2,337	..	..	..	..	..	..	142	2,337
	Grass and grazing	..	..	..	38,382	..	74,000	..	..	..	1,12,382
	Karvi	..	..	..	501	..	..	..	..	..	501
	Tarwad	..	..	..	5,102	..	..	..	..	..	5,102
	Stones and earth	..	..	1,050	176	4,154	1,063	..	..	..	1,239
	Fruits	..	..	..	118	..	..	..	..	..	118
	Rab	..	..	..	..	..	725	..	..	..	725
	Miscellaneous	..	..	..	60	..	..	..	..	..	60
	Total ..	142	2,337	..	44,339	..	75,788	..	..	..	1,22,464
Sátára.	Grass and grazing	..	..	..	35,111	..	..	..	..	..	35,111
	Hirda	155	7,060	..	..	..	..	..	..	155	7,060
	Stones .. .. No.	..	..	800	17	..	..	..	..	800	17
	Do. .. Cart-loads.	..	..	10,659	817	..	..	..	..	10,659	817
	Do. .. Cubic feet.	..	..	1,67,530	2,432	..	..	..	..	1,67,530	2,432
	Earth .. Cart-loads.	..	..	19	1	..	..	..	..	19	1
	Aloe sticks .. No.	..	..	350	6	..	..	..	..	350	6
	Do. .. Head-loads.	..	..	290	8	..	..	..	..	290	8
	Creepers .. .. Do. ..	..	..	38	9	..	..	..	..	38	9
	Karvi .. .. Do. ..	..	..	160	1	..	..	..	..	160	1
	Teak, temburni .. Do. ..	..	..	108	7	..	..	..	..	108	7
	Thorns .. .. Do. ..	..	..	13,068	897	..	..	..	..	13,068	897
	Total ..	..	7,060	..	39,306	..	..	..	..	..	46,366
Sholápur.	Bábul bark	5	24	..	..	..	..	..	..	5	24
	Stones	..	..	..	13	..	..	..	..	..	13
	Skin	..	..	1	2	..	..	..	..	1	2
	Gum	..	..	..	21	..	..	..	..	..	21
	Earth	..	..	..	1	..	..	..	..	..	1
	Fruits	..	..	..	6	..	..	..	..	..	6
	Tarwad	..	..	..	3,941	..	..	..	..	..	3,941
	Total ..	..	24	..	3,984	..	..	..	..	..	4,008
Surat.	Grass and grazing	..	..	..	915	..	..	..	..	..	915
	Do. .. Cart-loads.	..	..	533	133	..	..	..	..	533	133
	Mowra seed	..	..	..	41	..	..	..	..	..	41
	Do. Flowers .. Mds.	..	..	6	2	..	..	..	..	6	2
	Earth & Kankar Cart-loads.	..	..	18	6	..	..	..	..	18	6
	Bámbu mats	..	..	5,969	323	..	..	..	..	5,969	323
	Ashindra leaves .Cart-loads.	..	..	10	20	..	..	..	..	10	20
	Do. .. .. Bundles.	..	..	12,35,725	244	..	..	..	..	12,35,725	244
	Temburni & kankar .. Cart-loads.	..	..	244	122	..	..	..	..	244	122
	Honey and wax .. Mds.	..	..	1,083	60	..	..	..	..	1,083	60
	Date and palm trees ..	..	..	945	74	..	..	..	..	945	74
	Lac and gum .. Mds.	..	..	1	1	..	..	..	..	1	1
	Catechu .. .. Seers.	..	..	26	4	..	..	..	..	26	4
	Total ..	..	..	..	1,945	..	..	..	..	..	1,945
Panch Mahals.	Grass and grazing	..	..	..	5,321	..	..	..	..	..	5,321
	Stones .. Cart-loads.	..	..	3	10	..	..	..	..	3	10
	Kankar .. Do. ..	..	..	99	50	..	..	..	..	99	50
	Sand .. Cubic feet.	..	..	53,500	67	..	..	..	..	53,500	67
	Mowra flowers	..	..	..	1,832	..	..	..	..	..	1,832
	Thorns .. Cart-loads.	..	..	72	18	..	..	..	..	72	18
	Seed .. Mds.	7	17	..	..	..	..	..	..	7	17
	Atedi	..	..	..	25	..	..	..	..	..	25
	Mango fruits, manure and palm leaves, &c.	..	..	..	26	..	..	..	..	..	26
	Total ..	..	17	..	7,349	..	..	..	..	..	7,366

A. T. SHUTTLEWORTH,
Conservator of Forests, Northern Circle.

Poona,
31st October 1888.

FORM No. 56.

FORM No. 56.

FOREST DEPARTMENT, BOMBAY, NORTHERN CIRCLE.

Account of Timber and other Produce cut or collected by Government Agency and brought to Sale Depôts or sold locally during the year 1887-88.

Particulars.	Number or Quantity.	Cubic Feet.	Total of each Head. Number or Quantity.	Total of each Head. Cubic Feet.
TIMBER.				
Balance at commencement of the year.				
North Thána ... Teak logs and rafters ...	9,344	.....		
North Thána ... Material for agricultural implements ...	1,259	.....		
North Thána ... Mixed kind of wood pieces....	563	.....		
			11,166	
South Thána ... Teak pieces	9,200	.....	9,200	
West Khándesh ... Teak rafters	1,653	.....		
West Khándesh ... Do. pieces	1,056	.....		
West Khándesh ... Ain logs	5	.....		
			2,714	
Ahmednagar ... Teak rafters	3,741	.....		
Ahmednagar ... Jámbul do.	4,575	.....		
			8,316	
Násik ... ... Teak rafters	11,644	.....	11,644	
Sátára ... ... Junglewood rafters ...	1,077	.....	1,077	
Surat ... ... Teak pieces... ...	30,461	.....		
Surat ... ... Sadada do.	2,002	.....		
Surat ... ... Junglewood do.... ...	696	.....		
			33,159	
Panch Maháls ... Teak pieces	210	.....		
Panch Maháls ... Do. poles	83	.....		
Panch Maháls ... Do. rafters	2,368	.....		
Panch Maháls ... Do. beams	8	.....		
Panch Maháls ... Do. pieces Cart-loads	7	.....		

Particulars.	Number or Quantity.	Cubic Feet.	Total of each Head. Number or Quantity.	Total of each Head. Cubic Feet.
Sold locally.		C.ft.		
Teak logs and rafters	3,38,898	54·94		
Do. pieces	73,153	.....		
Do. do. ... ... Carts.	7	.....		
Bábul logs	596	.....		
Jámbul rafters	19,431	.....		
Junglewood do.	13,401	.....		
Material for agricultural implements	1,259	.....		
		Kh. Ft. I. P.		
Teak pieces, green	947	1,565 10 11 1		
Do. dry	955	736 0 0 0		
Ain pieces	129	108 0 0 0		
Beo do.	31	38 0 0 0		
Kanti and khair pieces	171	106 0 0 0		
Tanach do.	26	14 0 0 0		
Sisu do.	28	27 0 0		
Haladwan do.	4	6 0 0		
			4,49,029 7 carts.	Kh. Ft. In. P. 2,600 10 11 1
				C.ft. 54·94
Removed by purchasers from Depôt.				
Teak logs and rafters	1,01,936	.....		
Junglewood pieces	670	.....		
			1,02,606	

Do. posts	13	.....		
Miscellaneous pieces ...	19	.....		
Do. poles ...	30	.....		
Do. rafters ...	360	.....		
Do. posts ...	46	.....	3,137 7 carts.	
Total Balance ...	.....	.....	80,413 7 carts.	
Received from the forests in Depôts.				
Teak logs and rafters	4,92,324	C.ft. 54·94		
Do. pieces	82,951	.....		
Bábul logs	596	.....		
Jámbul rafters	15,208	.....		
Sadada pieces	436	.....		
Junglewood do.	13,897	K. Ft. I. P.		
Teak pieces, green	1,689	2,802 10 11 1		
Do. dry	955	736 0 0 0		
Ain pieces	129	108 0 0 0		
Beo do.	31	38 0 0 0		
Kanti and khair pieces	171	106 0 0 0		
Tanach pieces	26	14 0 0 0		
Sisu do.	28	27 0 0 0		
Haladwan do.	4	6 0 0 0	6,08,445	C.ft. 54·94
				K. Ft. I. P. 3,837 10 11 1
Total ...	.....	.....	6,88,858 7 carts.	C.ft. 54·94 K. Ft. I. P. 3,837 10 11 1

Lost or written off.				
Teak logs and rafters	649	.....		
Jámbul do.	352	.....	1,001	
Free Grants.				
Teak logs and rafters	515	.....	515	
Supplied to other Departments.				
Teak logs and rafters	1,016	.....	1,016	
Used by the Department.				
Junglewood pieces	114	.....	114	Kh. Ft. In. P. 2,600 10 11 1
			5,54,281 7 carts.	C.ft. 54·94
Balance at the close of the year.				
North Thána ... Teak logs and rafters ...	643	.....		
North Thána ... Junglewood pieces ...	616	.....	1,259	
West Khándesh . Teak pieces	1,062	.....	1,062	
Násik ... ... Teak logs and rafters ...	77,417	.....	77,417	
Sátára ... ... Junglewood do. ...	1,196	.....	1,196	
Surat ... ... Teak pieces, green ...	742	1,237 0 0		
Surat ... ... Do. do. ...	49,767	.....		
Surat ... ... Sadada do. ...	2,438	.....		
Surat ... ... Junglewood do. ...	696	.....	53,643	Kh. Ft. I. P. 1,237 0 0 0
Total Balance ...	.....	.....	1,34,577	1,237 0 0 0
Total ...	.....	.....	6,88,858 7 carts.	C.ft. 54·94 Kh. Ft. I. P. 3,837 10 11 1

FORM No. 56—*continued.*

Particulars.	Number or Quantity.	Cubic Feet.	Total of each Head. Number or Quantity.	Total of each Head. Cubic Feet.
		K. m. lbs.		K. m. lbs.
				FIREWOOD.
Balance at commencement of the year.				
North Thána ... ... Firewood	.....	2,973 0 0	.....	2,973 0 0
South Thána ... ... Do.	.....	4,835 11 0	.....	4,835 11 0
West Khándesh ... Do.	.....	530 0 0	.....	530 0 0
Násik ... ... Do.	1,100	20 0 0	1,100	20 0 0
Ahmednagar ... ... Do.	.....	62 10 12	.....	62 10 12
Sátára ... ... Do.	.....	179 5 0	.....	179 5 0
Charcoal	.....	13 0 0	.....	13 0 0
Surat ... ... Firewood	Carts 996	315 0 0	Carts 996	315 0 0
		Tons 151		Tons 151
		K. m. lbs.		K. m. lbs.
Panch Mahális ... Do.	.....	1,311 0 0	.....	1,311 0 0
			1,100	10,238 26 12
			Carts 996	Tons 151
Received from the Forests in Depôts.				
Firewood	871	52,264 0 24		
Do. ... ... Carts.	8	Tons 99		
		K. m. lbs.		
Charcoal	.....	11 20 0		
			871	52,275 20 24
			Carts 8	Tons 99
Total ...	.....	.....	1,971 Carts 1,004	62,514 19 8 Tons 250

Particulars.	Number or Quantity.	Cubic Feet.	Total of each Head. Number or Quantity.	Total of each Head. Cubic Feet.
		K. m. lbs.		K. m. lbs.
Sold locally.				
Firewood	946	49,856 23 24		49,856 23 24
		Tons 62		Tons 62
			946	
Removed by Purchasers in Depôt.				
		K. m. lbs.		
Firewood	.....	5,307 9 0		
Charcoal	.....	12 13 0		
				5,319 22 0
Lost or written off.				
Firewood	.....	175 10 19	.....	175 10 19
Free grants.				
Firewood	1,025	287 8 21		
			1,025	287 8 21
			1,971	55,639 9 8
				Tons 62
Balance at the close of the year.				
				K. m. lbs.
North Thána ... Firewood...	.....	33 0 0	.....	33 0 0
South Thána ... Do.	.....	4,642 18 0	.....	4,642 18 0
West Khándesh ... Do.	.....	60 0 0	.....	60 0 0
Násik ... ... Do.	.....	1,148 0 0	.....	1,148 0 0
Sátára ... ... Do.	.....	545 13 0	.....	.....
Charcoal	.....	12 7 0	.....	557 20 0
Surat ... ... Firewood...	Carts 1,004	434 0 0	Carts 1,004	434 0 0
		Tons 188	.....	Tons 188
Total Balance ...	.....	.....	Carts 1 004	6,875 10 0
				Tons 188
				K. m. lbs.
Total ...	.....	.....	1,971 Carts 1,004	62,514 19 8 Tons 250

BA'MBUS.

Balance at commencement of the year.					*Sold locally.*			
Sátára	Bámbus.	10,251	.....	10,251	.....	Bámbus ... ... No.	15,314	.....	
Panch Mahals...	Dó.	Carts 35	.....	Carts 35	.....	Do. ... ... Cart-loads.	35	.....	
						Do. ... ... Head-loads.	23	.....	15,372
Received from the Forests in Depôts.						*Used by the Department.*			
Bámbus		6,648	.....			Bámbus	1,330	.....	1,330
Do. ... ... Head-loads.		23	.....						16,702
				6,671	.....	*Balance at the close of the year.*			
						Sátára ... . Bámbus.	255	.....	255
Total ...		.....	.....	16,957	.....	Total ...	.....	.....	16,957

OTHER MINOR PRODUCE.

				K. m. lbs.		K. m. lbs.			K. m. lbs.		K. m. lbs.
Balance at commencement of the year.							*Sold locally.*				
North Thána... ...	Ain bark	.....	36	0 0	.....	36 0 0	Ain bark	.....	171	0 0	
							Bábul bark....	... ..	5	7 14	
South Thána	Hirda	.....	0	12 12	.....		Hirda	... ..	764	0 9	
	Seed	.....	14	21 5	.....	15 5 17	Seed	.....	45	7 16	
Ahmednagar ...	Seed	.....	14	7 22	.....	14 7 22	Karvi ... ... Cart-loads.	8	.....		
							Do. ... ... Head-loads.	52	.....		
Násik	Hirda	.....	1	18 24	.....	1 18 24	Bábul thorn ... ... Cart-loads.	191	.....		
Poona	Do.	.....	1	16 20	.....	1 16 20					251
Sátára	Do.	.....	145	7 3½			*Lost or written off.*				
	Seed	.....	25	26 26		171 6 1½	Hirda	.....	48	16 3¼	.....
Surat	Bábulthorn. Cart-loads.	186	.....		186						
Panch Mahals ...	Do. do. ...	6	.....		6						
	Seed	.....	0	19 3¼	.....	0 19 3¼	*Supplied to other Departments.*				
							Hirda	.....	0	1 4	
							Seed	... ..	0	0 22	
					Carts 192	240 18 3¾					

K. m. lbs.
985 15 11
48 16 3½
0 1 26

FORM No. 56—*continued.*

Particulars.	Number or Quantity.	Cubic Feet.	Total of each Head. Number or Quantity.	Total of each Head. Cubic Feet.
		K. m. lbs.		K. m. lbs.
Received from the Forests in Depôts.				
Ain bark	.....	186 0 0		
Bábul do.	.....	5 7 14		
Hirda	.....	813 23 2		
Seed	.....	274 17 1½		
Shikakai	.....	49 12 0		
Kárvi ... ...Cart-loads ..	8	.....		
Do. ... ...Head-loads...	52	.....		
Thorns ... ... Do. ...	57½	.....		
Teak leaves ... ... Do. ...	6	.....		
			123½	1,329 3 17½
Total ...	.....	.....	315½	1,569 21 21¼

Particulars.	Number or Quantity.	Cubic Feet.	Total of each Head. Number or Quantity.	Total of each Head. Cubic Feet.
		K. m. lds.		K. m. lds.
OTHER MINOR PRODUCE—*continued.*				
Used by the Department.				
Hirda	.....	2 3 5		
Seed	.....	201 15 13		
Thorns ... ...Head-loads..	57½	.....		
Teak leaves ... ... Do. ...	6	.....		
			63½	203 18 18
			314½	1,237 24 2½
Balance at close of the year.				
North Thána ... .Ain bark ...	.....	51 0 0	.....	51 0 0
South Thána ... ... {Hirda ...	.....	2 15 6	.....	.....
{Seed ...	.....	4 19 12	.....	7 6 18
Násik ... ...Hirda ...	.....	4 9 0	.....	4 9 0
Ahmednagar ... ...Seed... ...	.....	45 1 15	.....	45 1 15
{Hirda ...	.....	141 6 2¾	.....	.....
Sátára ... ... {Shikakai ...	.....	49 12 0	.....	.....
{Seed ...	.....	32 19 11	.....	223 9 13 ¾
Surat ... Bábul thorns. Cart-loads ...	1	.....	1	.....
Panch Mahals ... Seeds	.....	0 27 0	.....	0 27 0
Total Balance ...	.....	.....	1	331 25 18¾
Total ...	.....	.....	315½	1,569 21 21¼

Dated Poona, the 31st October 1888.

A. T. SHUTTLEWORTH,
Conservator of Forests, Northern Circle.

FORM No. 57.

FOREST DEPARTMENT, BOMBAY, NORTHERN CIRCLE.

Abstract showing the Value of Timber and other Produce at Sale-Depôts for the year 1887-88.

Description of Timber and other Produce.	On hand at commencement of the year.			On hand at close of the year.			Difference in value.		Remarks.
	No.	Khandies.	Value.	No.	Khandies.	Value.	In favour of the year.	Against the year.	
North Thána Division.		K. m. s.	Rs.		K. m. s.	Rs.	Rs.	Rs.	
Teak pieces	9,344	.....	2,500	643	.....	300	...	...	
Junglewood pieces ...	563	.....	200	616	.....	200	...	...	
Material for agricultural implements	1,259	.....	300	...	.....	...	...	...	
Firewood	...	2,948 0 0	1,800	...	33 0 0	17	...	...	
Junglewood pieces ...	25	.....	2	...	.....	...	...	...	
Ain bark	...	36 0 0	180	...	51 0 0	50	...	...	
Total ...	...	.....	4,982	...	.....	567	...	4,415	
South Thána Division.									
Teak pieces	9,200	.....	4,600	...	.....	...	...	...	
Firewood	...	4,835 11 0	205	...	4,642 18 0	12	...	...	
Hirda fruit	...	0 12 6	6	...	2 15 3	30	...	...	
Miscellaneous seeds ...	...	14 21 5			4 19 6				
Total ...	...	.....	4,811	...	.....	42	...	4,769	
East Khándesh Division.									
Seed	...	5 2 10	...	...	6 20 2	...	...	...	
Total ...	...	.....	...	...	.....	...	...	...	
West Khándesh Division.									
Teak rafters	1,653	.....	10	...	.....	...	...	...	
Do. pieces	1,056	.....	52	1,062	.....	106	...	...	
Ain logs	5	.....	20	...	.....	...	...	...	
Firewood	...	530 0 0	343	...	60 0 0	26	...	...	
Seeds	...	.....	...	...	8 14 7	...	...	...	
Total ...	...	.....	425	...	.....	132	...	293	
Násik Division.									
Teak rafters	11,644	.....	1,530	77,417	.....	30,800	...	...	
Firewood	1,100	20 0 0	20	...	1,148 0 0	570	...	...	
Hirda	...	1 18 24	70	...	4 9 0	50	...	...	
Total ...	...	.....	1,620	...	.....	31,420	29,800	...	
Ahmednagar Division.									
Teak rafters	3,744	.....	166	...	.....	...	...	...	
Jambul do.	4,575								
Firewood	...	62 10 12	16	...	45 1 15	...	...	...	
Seed...	...	14 7 22							
Total ...	...	.....	182	...	.....	...	...	182	
Poona Division.									
Hirda	...	1 16 20	...	...	.....	...	...	...	Used for plantation.
Total ...	...	.....	...	...	.....	...	...	...	

FORM No. 57—*continued.*

Description of Timber and other Produce.	On hand at commencement of the year.			On hand at close of the year.			Difference in value.		Remarks.
	No.	Khandies.	Value.	No.	Khandies.	Value.	In favor of the year.	Against the year.	
Sátára Division.		K. m. s.	Rs.		K. m. s.	Rs.	Rs.	Rs.	
Junglewood rafters ...	1,077	.....	1,000	1,196	.....	200	...	...	
Firewood	...	179 5 0	175	...	545 13 0	500	...	...	
Charcoal	...	13 0 0	75	...	12 7 0	70	...	...	
Bámbus	10,251	.....	100	255	... ..	5	...	...	
Hirda	...	145 7 3½	950	...	141 6 2¾	500	...	...	
Seeds	...	25 26 26	...	...	32 19 11	...	...	...	
Shikakai	...	.....	...	...	49 12 0	325	...	...	
Total ...	...	.....	2,300	...	.....	1,600	...	700	
Sholápur Division.									
Nil	...	.....	...	...	.....	...	...	...	
Surat Division.									
Teak pieces	30,461	.....	23,500	46,245	.....	18,825	...	...	
Sadada pieces	2,002	.....	1,000	2,438	}	400	...	...	
Rajalu do.	696	.....	300	696	}				
		Tons.			Tons.				
Firewood	...	151	715	...	180	900	...	...	
		K. m. s.			K. m. s.				
Teak do.	...	550 0 0	550	...	550 0 0	} 100	...	...	
Jungle firewood	...	761 0 0	435	...	886 0 0	}			
Teak timber	...	.....	...	...	1,237 0 0	6,185	...	...	
Total ...	...	.....	26,500	...	.....	26,410	...	90	
Panch Mahâls Division.									
Teak beams	8	.....	16	...	.....	...	...	...	
Do. poles...	83	.....	79	...	.....	...	...	...	
Do. rafters, 1st Class ...	870	.....	110	...	.....	...	...	...	
Do. do. 2nd Class ...	1,468	.....	78	...	.....	...	...	...	
Do. pieces	210	.....	100	...	.....	...	...	...	
Do. do.	Carts. 7	.....	21	...	.....	...	...	...	
Miscellanéons pieces ...	19	.....	13	...	.....	...	...	...	
Bámbus	Carts. 35	.....	70	...	.....	...	...	...	
Firewood	...	.....	650	...	.....	...	...	...	
Seed	...	1,311 0 0	19	...	0 27 0	27	...	...	
Teak posts...	13	0 19 3¼	10	...	.....	...	...	...	
Miscellaneous poles ...	30	.....	15	...	.....	...	...	...	
Do. rafters ...	360	.....	16	...	.....	...	...	...	
Do. posts ..	46	.....	22	...	.....	...	...	...	
Thorns	Carts. 6	.....	2	...	.....	...	...	...	
Total ...	...	.....	1,221	...	.....	27	...	1,194	

Net difference in favor of the year Rs. 18,157.

Poona, 31st October 1888,

A. T. SHUTTLEWORTH,
Conservator of Forests, Northern Circle.

FORM No. 57A.

FOREST DEPARTMENT, BOMBAY, NORTHERN CIRCLE.

Abstract showing the Value of Live and Dead Stock for the year 1887-88.

Description of Live and Dead Stock.	On hand at commencement of the year.		On hand at close of the year.		Difference in Value.		Remarks.
	Number.	Value.	Number.	Value.	In favour of the year	Against the year.	
North Thána Division.		Rs.		Rs.	Rs.	Rs.	
Parol bungalow	1	1,200	1	1,200	...	...	
Náka house at Mándvi ...	1	250	1	250	...	...	
Do. at Mánikpur ...	...	...	1	603	...	...	
Forest stations	38	570	38	570	...	...	
Do. posts	82	820	84	840	...	...	
Office tent	1	273	1	273	...	...	
Greatcoats	...	...	226	1,359	...	...	
Tools, plant and office furniture ...	...	2,648	...	2,774	...	...	
Total ..	...	5,761	...	7,869	2,108	...	
South Thána Division.							
Office tent	1	273	1	273	...	...	
Small rowties	2	186	2	186	...	...	
Greatcoats	...	...	263	1,713	...	...	
Tools, plant and office furniture ...	...	455	...	581	...	...	
Total ...	...	914	...	2,753	1,839	...	
East Khándesh Division.							
Office tent	1	248	1	248	...	...	
Rowtie	1	100	...	...	...	...	Sold.
Greatcoats	...	...	192	1,254	...	...	
Tools, plant and office furniture ..	...	473	...	560	...	...	
Total ...	...	821	...	2,062	1,241	...	
West Khándesh Division.							
Office rowti	1	85	...	...	...	...	Sold.
Greatcoats	...	...	219	1,428	...	...	
Tools, plant and office furniture ...	...	429	...	1,054	...	...	
Total ...	...	514	...	2,482	1,968	...	
Násik Division.							
Office tents	2	300	2	300	...	...	
Greatcoats	...	...	592	1,976	...	...	
Tools, plant and office furniture ...	...	229	...	258	...	...	
Total ...	...	529	...	2,534	2,005	...	

FORM No. 57A—*continued.*

Description of Live and Dead Stock.	On hand at commencement of the year.		On hand at close of the year.		Difference in Value.		Remarks.
	Number.	Value.	Number.	Value.	In favour of the year.	Against the year.	
Ahmednagar Division.		Rs.		Rs.	Rs.	Rs.	
Sleeping pál 12′ × 12′, double-fly ...	1	246	1	246	...	...	
Office-room, Range Forest Officer, Karjat	1	214	1	214	...	...	
Hirda depôt, Shinganvádi ...	1	25	1	25	...	...	
Forest rest-houses	3	90	3	90	...	...	
Greatcoats	...	...	208	1,357	...	...	
Tools, plant and office furniture ...	...	2,045	...	2,074	...	...	
Total ...	...	2,620	...	4,006	1,386	...	
Poona Division.							
Office tent	1	273	1	273	...	...	
Range Forest Officers' offices ...	...	...	5	7,752	...	...	
Greatcoats	...	...	1,371	3,655	...	...	
Tools, plant and office furniture ...	...	345	...	345	...	...	
Total ...	...	618	...	12,025	11,407	...	
Sátára Division.							
Bungalow at Málcolmpeth ...	1	700	1	700	...	...	
Pál with double-fly	1	245	1	245	...	...	
Greatcoats	...	...	246	1,606	...	...	
Tools, plant and office furniture ...	...	616	...	742	...	...	
Total ...	...	1,561	...	3,293	1,732	...	
Sholápur Division.							
Office tent	1	100	1	100	...	...	
Greatcoats	...	...	119	777	...	...	
Tools, plant and office furniture ...	...	231	...	231	...	...	
Total ...	...	331	...	1,108	777	...	
Surat Division.							
Office tent, 12 feet	1	246	1	246	...	...	
Large Lilápur bungalow ...	1	...	...	...	...	...	Value cannot be found.
Small do. ...	1	...	...	...	...	...	Do.
Gandeva bungalow	1	...	...	...	...	...	Do.
Andhatri do.	1	291	1	291	...	...	
Dadhvada do.	1	30	1	30	...	...	
Large Waghai bungalow ...	1	1,099	2	1,099	...	...	
Small do. do. ...	1						
Large Pimpri do. ...	1	499	1	499	...	...	
Do. Garvi do. ...	1	1,012	1	1,012	...	...	
Small do. do. ...	1	288	1	288	...	...	
Greatcoats	...	...	67	438	...	...	
Tools, plant and office furniture ...	...	1,964	...	917	...	...	
Total ...	...	5,429	...	4,820	...	609	

FORM No. 57A—*concluded.*

Description of Live and Dead Stock.	On hand at commencement of the year.		On hand at close of the year.		Difference in Value.		Remarks.
	Number.	Value.	Number.	Value.	In favour of the year.	Against the year.	
Panch Mahâls Division.		Rs.		Rs.	Rs.	Rs.	
Rest-houses and depôts ...	20	1,853	30	2,250	...	...	
Bungalow	1	8,200	1	8,200	...	...	
Office rowti with carpets ...	1	273	1	273	...	...	
Greatcoats	...	...	110	717	...	...	
Tools, plant and office furniture ...	...	906	...	956	...	...	
Total ...	...	11,232	...	12,396	1,164	...	
Working Plans, &c.							
Office tent	1	285	1	285	...	...	
Tools, plant and office furniture ...	...	1,022	...	1,086	...	...	
Total ...	...	1,307	...	1,371	64	...	

Poona, 31st October 1888.

A. T. SHUTTLEWORTH,
Conservator of Forests, Northern Circle.

FORM No. 5.

FOREST DEPARTMENT, BOMBAY, NORTHERN CIRCLE.

Summary of Revenue and Expenditure of the different Divisions during the year 1887-88.

Budget Heads.	Direction.	North Thána Division.	South Thána Division.	Ahmednagar Division.	Násik Division.	Surat Division.	Sholápur Division.	Sátára Division.	Poona Division.	Panch Mahals Division.	East Khándesh Division.	West Khándesh Division.	Working Plans Division.	Division.	Total.
REVENUE.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
I.—Timber and other Produce removed from the Forests by Government agency—															
a. Timber	.....	37,892 11 7	25,690 0 1	9,125 7 10	22,558 1 0	17,913 8 0	143 7 0	15,633 8 2	27,771 13 0	290 6 0	10,856 2 0	23,369 5 0	.....	1,91,294 5 8	1,91,294 5 8
b. Firewood and charcoal	.....	10,433 15 6	2,535 7 10	1,517 10 6	3,191 15 0	311 2 0	986 3 3	3,208 4 0	15,820 8 0	4,370 6 0	5,571 3 0	3,943 1 0	.....	51,889 12 1	51,889 12 1
c. Bámbus	.....	.....	.....	.....	.....	.....	0 15 9	259 13 0	.....	1 0 0	.....	.....	.....	241 12 9	241 12 9
d. Sandalwood	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
e. Grass and other minor produce	.....	853 8 0	2,561 0 7	2,736 5 4	1,068 1 11	.....	24 1 6	7,065 6 1	2,336 14 1	17 4 10	.....	11 0 0	.....	16,673 10 4	16,673 10 4
II.—Timber and other Produce removed from the Forests by Consumers or Purchasers—															
a. Timber	.....	1,28,592 7 4	93,254 8 6	9 4 6	9,397 3 11	18,259 4 1	243 8 6	2,139 13 8	51 5 4	41,982 7 9	2,216 6 0	11,345 8 6	.....	3,02,491 14 1	3,02,491 14 1
b. Firewood and Charcoal	.....	8,022 5 3	634 9 9	491 6 3	1,554 8 2	1,676 5 8	379 14 6	299 7 0	1,471 11 10	836 3 10	6,679 10 9	2,610 8 9	.....	24,646 11 9	24,646 11 9
c. Bámbus	.....	14,127 14 3	565 15 6	289 9 0	3,994 8 7	13,693 11 8	.....	400 13 2	1,104 11 0	467 4 9	3,596 0 2	1,809 13 1	.....	40,050 5 2	40,050 5 2
d. Grazing and fodder grass	.....	10,969 11 0	4,453 3 0	28,626 11 7	36,370 7 4	924 4 6	10,534 13 11	35,111 0 9	38,381 15 3	5,321 7 0	34,858 13 2	43,302 11 0	.....	2,48,855 2 6	2,48,855 2 6
e. Other minor produce	.....	4,539 3 6	2,707 14 6	1,407 14 7	2,786 3 8	1,021 13 11	3,984 0 0	4,194 12 6	6,053 2 9	2,028 14 9	214 1 6	9,062 10 0	.....	38,000 11 8	38,000 11 8
III.—Confiscated, Drift and Waif Wood	.....	1,028 10 1	1,754 5 7	247 8 10	157 1 9	231 8 2	39 14 8	66 6 7	127 8 2	28 12 3	78 14 9	1,209 1 6	.....	4,960 12 4	4,960 12 4
IV.—Revenue from Forests not managed by Government.															
a. Duty on foreign timber and other forest produce	.....	.....	.....	.....	239 11 3	69 14 0	.....	.....	.....	1 6 0	11,247 13 9	16,065 6 9	.....	27,624 3 9	27,624 3 9
b. Revenue from shared and private forests	.....	2,032 10 4	3,125 5 6	.....	.....	85 15 3	.....	33 14 0	225 9 2	250 0 0	10 8 0	.....	.....	5,763 14 3	5,763 14 3
V.—Miscellaneous—															
a. Fines and forfeitures	.....	.....	3,806 12 10	.....	35 8 6	20 12 0	.....	47 5 6	49 0 6	50 15 1	.....	25 0 0	.....	4,035 6 5	4,035 6 5
b. Refunds	15 11 8	32 15 7	24 13 4	.....	7 12 8	14 6 0	2 12 7	73 13 10	63 6 3	4 9 2	5 9 9	2 2 4	53 2 8	301 3 10	301 3 10
c. Other sources	26 0 0	4,442 8 4	1,484 9 1	1,012 0 3	690 1 1	1,263 0 4	113 12 6	267 15 7	361 15 5	1,409 9 2	223 14 2	479 14 11	.....	11,795 4 10	11,795 4 10
Total Revenue	41 11 8	2,17,968 8 9	1,42,588 10 1	45,483 14 8	82,051 4 10	55,485 9 7	16,444 8 2	68,832 5 10	93,819 8 9	57,060 10 7	75,559 1 0	1,13,236 2 10	53 2 8	9,68,625 3 5	9,68,625 3 5
EXPENDITURE.															
A.—CONSERVANCY AND WORKS.															
I.—Timber and other Produce removed from the Forests by Government agency—															
a. Timber	.....	8,620 14 5	5,568 6 10	1,466 10 3	5,943 10 11	8,494 15 4	11 11 6	1,718 2 3	2,235 11 3	375 8 0	1,784 6 3	4,329 3 6	.....	.....	40,549 4 6
b. Firewood and charcoal	.....	3,479 9 9	1,050 15 7	177 15 6	1,150 10 0	63 15 9	141 5 6	1,419 6 0	2,509 5 9	427 10 6	2,161 7 0	981 10 6	.....	.....	13,533 15 10
c. Bámbus	.....	.....	.....	.....	.....	.....	.....	64 9 0	.....	.....	.....	.....	.....	.....	64 9 0
d. Sandalwood	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
e. Grass and other minor produce	.....	112 4 0	1,406 11 0	1,152 15 6	630 10 1	.....	2 6 0	3,294 7 5	576 11 9	4 8 0	.....	.....	.....	.....	7,250 9 9
II.—Timber and other Produce removed from the Forests by Consumers or Purchasers	.....	5,000 7 5	1,049 1 11	522 10 6	1,716 4 2	2,303 11 11	.....	6,101 2 4	1,394 7 0	800 1 0	2,323 6 1	849 10 10	.....	.....	23,011 4 2
III.—Confiscated, Drift and Waif Wood	.....	10 5 10	21 15 0	0 11 6	5 7 0	12 5 6	.....	.....	.....	.....	17 5 0	27 0 4	.....	.....	114 5 4

IV.—Revenue from Forests not managed by Government—															
a. Duty on foreign timber and other forest produce	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,286 8 0	2,804 6 5	.....	.....	5,090 14 5
b. Revenue from shared and private forests	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
V.—Rent of Leased Forests and Payments to Shareholders in Forests managed by Government	.....	.....	9 4 1	823 2 7	.....	13,639 9 5	.....	6,956 5 0	1,454 1 3	.....	.....	.....	.....	.....	22,882 6 4
VI.—Live Stock, Stores, Tools and Plant—															
a. Purchase of cattle	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	47 5 0	.....	.....	47 5 0
b. Feed and keep of cattle	.....	.....	.....	.....	.....	.....	.....	1 8 0	18 8 0	6 0 0	.....	1 8 0	.....	.....	482 0 11
c. Stores, tools and plant	.....	373 10 0	0 8 0	19 0 6	46 6 5	15 0 0	.....								
VII.—Communications and Buildings.															
a. Roads and bridges	.....	.....	.....	49 15 0	.....	208 2 0	.....	.....	.....	.....	.....	.....	.....	.....	258 1 0
b. Buildings	.....	920 4 3	366 12 0	27 15 0	24 11 6	27 6 3	20 7 6	8 4 0	.....	478 12 0	176 14 0	355 0 0	.....	.....	2,406 6 6
c. Other works	.....	.....	10 0 0	.....	.....	.....	.....	35 3 0	.....	.....	.....	1,445 8 0	.....	.....	1,490 11 0
VIII.—Demarcation, Improvement and Extension of Forests—															
a. Demarcation	.....	1,947 9 9	676 4 2	4,238 11 5	2,717 4 0	501 13 8	1,021 1 0	2,625 2 6	3,762 1 1	1,945 10 6	372 11 1	5,434 6 11	1,637 4 5	.....	26,880 0 6
b. Compensation for land and rights	.....	2,330 0 0	9,946 0 0	4,645 4 8	534 10 0	.....	703 15 6	582 9 7	3,218 14 6	206 6 0	.....	.....	.....	.....	22,167 12 3
c. Surveys and working plans	125 12 0	1,141 6 3	9,232 6 0	373 0 6	18,415 1 1	.....	240 0 0	518 9 0	792 0 0	323 2 7	20 2 0	18 8 0	17,768 11 11	.....	48,968 11 4
d. Plantations	.....	226 7 10	160 15 3	987 6 4	1,991 0 0	59 5 0	1,662 10 8	935 0 5	325 11 7	.....	18 6 8	329 4 0	.....	.....	6,696 3 9
e. Protection from fire	.....	362 5 6	27 7 0	13 3 0	3 2 0	.....	.....	.....	1 4 0	.....	77 12 0	8 2 0	.....	.....	493 3 6
f. Other works	.....	188 1 6	.....	438 6 0	132 5 0	.....	68 13 6	394 1 3	384 10 2	.....	.....	.....	.....	.....	1,606 5 5
IX.—Miscellaneous—															
a. Refunds	.....	.....	.....	.....	2 10 0	239 15 2	.....	67 13 1	256 5 5	.....	.....	0 4 0	.....	.....	624 12 0
b. Law charges	.....	12 14 0	44 14 4	.....	150 13 9	.....	2 8 0	1,000 0 0	14 14 2	20 13 9	61 3 0	47 15 2	.....	.....	1,390 0 10
c. Other charges	.....	44 11 6	28 9 0	18 8 6											
Total, A.—Conservancy and works	125 12 0	24,900 0 0	30,589 13 11	14,955 13 5	33,464 9 11	25,567 7 2	3,844 15 2	25,722 2 10	16,914 9 11	4,588 8 4	9,335 14 6	16,680 2 7	19,406 0 4	.....	2,26,095 14 1
B.—Establishments.															
I.—Salaries.															
a. Conservators	18,000 0 0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	18,000 0 0
b. Superior Officers	.....	9,572 8 7	11,861 0 11	8,550 10 4	10,827 12 2	6,600 0 0	6,153 3 8	10,196 0 1	12,021 1 10	6,135 7 9	5,014 8 2	9,191 8 8	.....	.....	96,103 14 2
c. Subordinate Forest and Depôt Establishments	.....	25,887 10 2	27,850 3 9	23,761 0 5	32,271 8 10	7,856 7 1	12,578 9 4	27,994 9 11	36,167 3 7	12,432 10 2	22,507 7 2	23,946 13 10	.....	.....	2,53,254 4 3
d. Office Establishments	6,915 14 4	3,167 15 10	3,212 4 1	2,052 6 3	2,534 13 4	2,148 7 4	1,897 6 11	2,568 0 0	2,531 3 7	1,887 10 2	2,200 11 4	2,546 0 0	.....	.....	33,657 13 2
e. Deputation and special allowances	246 4 2	.....	.....	.....	.....	.....	.....	.....	.....	.....	190 0 0	.....	.....	.....	436 4 2
II.—Travelling Allowances.															
a. Conservators	2,400 0 0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,400 0 0
b. Superior Officers	.....	3,104 7 6	4,997 14 1	1,800 0 0	2,520 0 0	1,800 0 0	1,858 7 2	2,474 13 9	2,369 13 4	1,800 0 0	1,524 14 4	2,460 9 7	.....	.....	26,710 15 9
c. Subordinate Forest and Depôt Establishments	.....	1,009 4 8	1,028 14 5	1,450 10 10	1,886 9 10	792 4 4	838 15 10	1,780 4 3	1,732 14 0	766 14 7	1,741 1 11	1,342 3 0	.....	.....	14,370 1 8
d. Office Establishments	1,931 2 3	999 3 7	1,064 12 8	755 11 0	903 3 3	740 0 6	675 13 0	841 15 11	925 4 5	617 14 8	776 11 9	823 9 4	.....	.....	11,055 6 4
III.—Contingencies.															
a. Stationery	39 2 0	379 15 8	395 14 9	381 14 9	508 15 10	212 11 7	220 9 8	494 14 7	364 8 8	205 5 5	356 11 4	389 15 0	.....	.....	3,950 11 3
b. Carriage of tents and records	518 9 7	219 14 6	205 2 0	341 3 1	545 11 6	184 2 0	93 13 0	352 13 0	283 9 7	120 8 0	149 13 8	229 2 6	.....	.....	3,244 6 0
c. Rents, rates and taxes	480 0 0	281 14 5	326 14 10	252 0 0	102 0 0	96 0 0	72 0 0	100 0 0	328 12 9	5 6 9	238 8 0	246 0 0	.....	.....	2,529 8 9
d. Pay of police guards	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
e. Official postage	509 2 0	556 10 6	737 9 0	534 2 0	851 12 0	185 11 0	254 0 6	664 6 6	636 5 0	257 4 0	607 9 0	569 8 6	.....	.....	6,364 0 0
f. Sundries	317 9 11	1,640 8 9	904 2 10	1,315 12 10	1,955 2 7	466 1 10	814 2 7	961 6 9	2,034 4 10	726 1 3	1,455 6 4	2,142 9 6	.....	.....	14,733 6 0
Payments to Officers of other Provinces	10,228 14 3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10,228 14 3
Total, B.—Establishments	41,586 10 6	46,820 2 2	52,584 13 4	41,175 7 6	54,907 9 4	21,076 13 8	25,457 1 8	48,429 4 9	59,395 1 7	24,955 2 9	36,763 6 7	43,887 15 11	.....	.....	4,97,689 9 9
Grand Total of Expenditure	41,712 6 6	71,720 2 2	83,174 11 3	56,131 4 11	88,372 3 3	46,644 4 10	29,302 0 10	74,151 7 7	76,309 11 6	29,543 11 1	46,099 5 1	60,568 2 6	19,406 0 4	.....	7,23,185 7 10

No. $\frac{F}{12643}$.

Forwarded to the Conservator of Forests, Northern Circle, under Section 238 of the Forest Code.

Bombay, 10th August 1888.

STEPHEN JACOB,
Accountant General.

631—25-8-88

FORM No. 59.

FOREST DEPARTMENT, BOMBAY, NORTHERN CIRCLE.

Account current for the year 1887-88.

	Rs. a. p.	Rs. a. p.		Rs. a. p.	Rs. a. p.
To Cash Balance	.....	15,759 0 7	By 1. Refunds and Drawbacks	.....	6,721 8 11
VIII.—Assessed Taxes—Income Tax—			11. Forests	.....	7,23,135 7 10
Deductions by Government from Salaries and Pensions.	.....	3,752 2 1	19. Law and Justice—		
IX.—Forest	.....	9,68,625 3 5	Jails—District Jails—		
XII.—Interest—			Contingencies	.....	.....
Interest on Arrears of Revenue	.....	24 9 10	26. Scientific and other Minor Departments—		
XVI.—Law and Justice—			Botanical, &c., Supplies and Services—		
Fees, Fines, and Forfeitures—			Garden Expenses	.....	1 2 9
Magisterial Fines	.....	5 0 0	Revenue Deposits (Forests)	.....	25,714 4 4
XXIII.—Stationery and Printing—			Cheques and Bills (Departmental Cheques)—		
Other Press Receipts—			Forest Cheques (cancelled)	.....	7,734 11 1
Government Central Press	.....	15 15 3			
XXXII.—Civil Works in charge Civil Officers—			Advances Recoverable—		
Road-side Trees Receipts	.....	30 1 6	Forest Advances	4,00,409 7 0	
Revenue Deposits (Forests)	.....	44,621 12 9	Objection Book Advances	790 0 0	
Cheques and Bills—					4,01,199 7 0
Departmental Cheques—					
Forest Cheques drawn	.....	7,20,381 4 3	Cash Recoveries	.....	11,697 10 6
Advances Recoverable—			Forest Remittances—		
Forest Advances	4,01,926 2 8		Remittances to Treasuries	10,03,231 1 7	
Tentage Advances	120 0 0		Inter-Divisional Transfers	7,666 6 1	
Objection Book Advances	1,623 10 8				10,10,897 7 8
		4,03,669 13 4			
Cash Recoveries	.....	11,697 10 6	Suspense Account	.....	1 2 0
Forest Remittances—			Account between Bombay and Public Works Department (Railway Branches) Bombay—		
Remittances to Treasuries...	297 2 7		IV.—Items adjustable by Public Works Department—		
Inter-Divisional Transfers...	7,525 8 8		Inter-Departmental Charges...	.....	117 12 7
Inter-Departmental Transfers	1,358 3 3		Account between Bombay and Public Works Department (Ordinary Branches) Bombay—		
		9,180 14 6	IV.—Items adjustable by Public Works Department—		
Bombay Uncovenanted Service—			Inter-Departmental Charges...	.....	1,016 14 10
Family Pension Fund—			Account between Bombay and Military, Bombay—		
Widows' Branch	.....	471 4 0	IV.—Items adjustable by Military—		
Accounts between India and Bombay—			Miscellaneous	.....	970 2 10
IV.—Items adjustable by India—			Account between Burma and Bombay—		
Topographical Survey	.....	27,000 0 0			
Account between Bombay and Public Works Department—			IV.—Items adjustable by Burma—		
IV.—Items adjustable by Public Works Department—			Advances Recoverable	.....	150 0 0
Payments into Treasury by Civil Officers on account of Public Works Department	.....	354 3 11	Closing Balance ...	.....	16,232 5 7
Suspense Account	.....	1 2 0			
Total ...	.....	22,05,590 1 11	Total ...	.....	22,05,590 1 11

No. $\frac{F.}{12925}$.

Forwarded to the Conservator of Forests, Northern Circle, under Section 238 of the Forest Code.

Bombay, Accountant General's Office, 10th August 1888.

STEPHEN JACOB,

FORM No. 60.

ANNUAL FORM No. 60.

Forest Department, Bombay, Northern Circle.

Revenue received and Outstandings on account of Revenue during 1887-88.

Division.	Particulars.	Outstandings at commencement of year.	Value of Sales and other Revenue during year.	Total.	Amount realized during year.	Balance due to the Department at end of year.	Remarks.
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
North Thána ..	*I.—Timber and other produce removed from the Forests by Government agency—*						
	a. Timber	14 0 0	37,878 11 7	37,892 11 7	37,892 11 7	.....	
	b. Firewood and charcoal	.....	10,433 15 6	10,433 15 6	10,433 15 6	.....	
	c. Bámbus	.....	.....	.....	.....	.....	
	d. Sandalwood	.....	.....	.....	.....	.....	
	e. Grass and other minor produce ...	.....	853 8 0	853 8 0	853 8 0	.....	
	II.—Timber and other produce removed from the Forests by consumers and purchasers—						
	a. Timber	.....	1,23,592 7 4	1,23,592 7 4	1,23,592 7 4	.....	
	b. Firewood and charcoal	.....	8,022 5 3	8,022 5 3	8,022 5 3	.....	
	c. Bámbus	.....	14,127 14 3	14,127 14 3	14,127 14 3	.....	
	d. Grazing and fodder grass ...	.....	10,969 11 0	10,969 11 0	10,969 11 0	.....	
	e. Other minor produce	.....	4,539 3 6	4,539 3 6	4,539 3 6	.....	
	III.—Confiscated, drift, and waif wood ...	.....	1,028 10 1	1,028 10 1	1,028 10 1	.....	
	Total ...	14 0 0	2,11,446 6 6	2,11,460 6 6	2,11,460 6 6	.....	
South Thána ...	*I.—Timber and other produce removed from the Forests by Government agency—*						
	a. Timber	.....	25,690 0 1	25,690 0 1	25,690 0 1	.....	
	b. Firewood and charcoal	.....	2,535 7 10	2,535 7 10	2,535 7 10	.....	
	c. Bámbus	.....	.....	.....	.....	.....	
	d. Sandalwood	.....	.....	.....	.....	.....	
	e. Grass and other minor produce ...	.....	2,561 0 7	2,561 0 7	2,561 0 7	.....	
	II.—Timber and other produce removed from the Forests by consumers and purchasers—						
	a. Timber	66 9 0	1,70,254 8 6	1,70,321 1 6	93,254 8 6	77,066 9 0	
	b. Firewood and charcoal	.....	624 9 9	624 9 9	624 9 9	.....	
	c. Bámbus	.....	565 15 6	565 15 6	565 15 6	.....	

	d. Grazing and fodder grass ...	.....		4,453	15	0	4,453	15	0	4,453	3	0	0 12 0
	e. Other minor produce	.....		2,707	14	6	2,707	14	6	2,707	14	6	.....
	III.—Confiscated, drift, and waif wood ...	.....		1,754	5	7	1,754	5	7	1,754	5	7	.....
	Total ..	66	9 0	2,11,147	13	4	2,11,214	6	4	1,34,147	1	4	77,067 5 0
East Khándesh.	*I.—Timber and other produce removed from the Forests by Government agency—*												
	a. Timber	.....		10,856	2	0	10,856	2	0	10,856	2	0	.....
	b. Firewood and charcoal ...	.....		5,571	3	0	5,571	3	0	5,571	3	0	.....
	c. Bámbus	.....		.....			.....			.....			.....
	d. Sandalwood	.....		.....			.....			.....			.....
	e. Grass and other minor produce	.....		.....			.....			.....			.....
	II.—Timber and other produce removed from the Forests by consumers and purchasers—												
	a. Timber	.....		2,216	6	0	2,216	6	0	2,216	6	0	.....
	b. Firewood and charcoal ...	.....		6,679	10	9	6,679	10	9	6,679	10	9	.....
	c. Bámbus	.....		3,596	0	2	3,596	0	2	3,596	0	2	.....
	d. Grazing and fodder grass ...	.....		34,909	14	2	34,909	14	2	34,858	13	2	51 1 0
	e. Other minor produce	.....		214	1	6	214	1	6	214	1	6	.....
	III.—Confiscated, drift, and waif wood ...	.....		78	14	9	78	14	9	78	14	9	.....
	Total ...	.....		64,122	4	4	64,122	4	4	64,071	3	4	51 1 0
West Khándesh.	*I.—Timber and other produce removed from the Forests by Government agency—*												
	a. Timber	.....		23,369	5	0	23,369	5	0	23,369	5	0	.....
	b. Firewood and charcoal ...	.....		3,943	1	0	3,943	1	0	3,943	1	0	.....
	c. Bámbus	.....		.....			.....			.....			.....
	d. Sandalwood	.....		.....			.....			.....			.....
	e. Grass and other minor produce	.....		11	0	0	11	0	0	11	0	0	.....
	II.—Timber and other produce removed from the Forests by consumers and purchasers—												
	a. Timber	.....		11,345	8	6	11,345	8	6	11,345	8	6	.....
	b. Firewood and charcoal ...	.....		2,610	8	9	2,610	8	9	2,610	8	9	.....
	c. Bámbus	.....		1,809	13	1	1,809	13	1	1,809	13	1	.....
	d. Grazing and fodder grass ...	1,593	15 11	41,772	15	1	43,366	15	0	43,302	11	0	64 4 0
	e. Other minor produce	.....		9,062	10	0	9,062	10	0	9,062	10	0	.....
	III.—Confiscated, drift, and waif wood ...	.....		1,209	1	6	1,209	1	6	1,209	1	6	.....
	Total ...	1,593	15 11	95,133	14	11	96,727	14	10	96,663	10	10	64 4 0

FORM No. 60—*continued.*

Division.	Particulars.	Outstandings at commencement of year.	Value of Sales and other Revenue during year.	Total.	Amount realized during year.	Balance due to the Department at end of year.	Remarks.
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
Násik ...	*I.—Timber and other produce removed from the Forests by Government agency—*						
	a. Timber	4,775 8 1	21,925 2 0	26,700 10 1	22,558 1 0	4,142 9 1	
	b. Firewood and charcoal	57 2 0	3,139 5 0	3,196 7 0	3,191 15 0	4 8 0	
	c. Bámbus	.....	.....	.....	.....	.....	
	d. Sandalwood	.....	.....	.....	.....	.....	
	e. Grass and other minor produce ...	25 6 7	1,042 11 4	1,068 1 11	1,068 1 11	.....	
	II.—Timber and other produce removed from the Forests by cosumers and purchasers—						
	a. Timber	.....	9,397 3 11	9,397 3 11	9,397 3 11	.....	
	b. Firewood and charcoal	.....	1,572 0 2	1,572 0 2	1,554 8 2	17 8 0	
	c. Bámbus	.....	3,994 8 7	3,994 8 7	3,994 8 7	.....	
	d. Grazing and fodder grass ...	2,291 7 5	35,083 0 9	37,374 8 2	36,370 7 4	1,004 0 10	
	e. Other minor produce	.....	2,786 3 8	2,786 3 8	2,786 3 8	.....	
	III.—Confiscated, drift, and waif wood ...	3 4 3	157 1 9	160 6 0	157 1 9	3 4 3	
	Total ...	7,152 12 4	79,097 5 2	86,250 1 6	81,078 3 4	5,171 14 2	
Ahmednagar ...	*I.—Timber and other produce removed from the Forests by Government agency—*						
	a. Timber	.....	9,125 7 10	9,125 7 10	9,125 7 10	.....	
	b. Firewood and charcoal	.....	1,517 10 6	1,517 10 6	1,517 10 6	.....	
	c. Bámbus	.....	.....	.....	.....	.....	
	d. Sandalwood	.....	.....	.....	.....	.....	
	e. Grass and other minor produce ...	.....	2,736 5 4	2,736 5 4	2,736 5 4	.....	
	II.—Timber and other produce removed from the Forests by consumers and purchasers—						
	a. Timber	.....	9 4 6	9 4 6	9 4 6	.....	
	b. Firewood and charcoal	.....	491 6 3	491 6 3	491 6 3	.....	
	c. Bámbus	.....	289 9 0	289 9 0	289 9 0	.....	
	d. Grazing and fodder grass ...	.....	28,626 11 7	28,626 11 7	28,626 11 7	.....	
	e. Other minor produce	.....	1,407 14 7	1,407 14 7	1,407 14 7	.....	
	III.—Confiscated, drift, and waif wood ...	.....	247 8 10	247 8 10	247 8 10	.....	
	Total ...	.....	44,451 14 5	44,451 14 5	44,451 14 5	.....	

Poona ...	*I.—Timber and other produce removed from the Forests by Govevnment agency—*									
	a. Timber	.....	27,771	13	0	27,771	13	0	27,771	13	0	.....
	b. Firewood and charcoal	.....	15,820	8	0	15,820	8	0	15,820	8	0	.....
	c. Bámbus	.....	.....			.....			.....			.....
	d. Sandalwood	.....	.....			.....			.....			.....
	e. Grass and other minor produce ...	.....	2,336	14	1	2,336	14	1	2,336	14	1	.....
	II.—Timber and other produce removed from the Forests by consumers and purchasers—									
	a. Timber	.....	51	5	4	51	5	4	51	5	4	.....
	b. Firewood and charcoal	.....	1,471	11	10	1,471	11	10	1,471	11	10	.....
	c. Bámbus	.....	1,104	11	0	1,104	11	0	1,104	11	0	.....
	d. Grazing and fodder grass ...	.....	38,381	15	3	38,381	15	3	38,381	15	3	.....
	e. Other minor produce	.....	6,053	2	9	6,053	2	9	6,053	2	9	.....
	III.—Confiscated, drift and waif wood ...	.....	127	8	2	127	8	2	127	8	2	.....
	Total	.....	93,119	9	5	98,119	9	5	93,119	9	5	.....
Sátára	*I.—Timber and other produce removed from the Forests by Government agency—*									
	a. Timber	.....	15,683	8	2	15,683	8	2	15,683	8	2	.....
	b. Firewood and charcoal	.....	3,208	4	0	3,208	4	0	3,208	4	0	.....
	c. Bámbus	.....	239	13	0	239	13	0	239	13	0	.....
	d. Sandalwood	.....	.....			.....			.....			.....
	e. Grass and other minor produce ...	.....	7,065	6	1	7,065	6	1	7,065	6	1	.....
	II.—Timber and other produce removed from the Forests by consumers and purchasers—									
	a. Timber	.....	2,139	13	8	2,139	13	8	2,139	13	8	.....
	b. Firewood and charcoal	.....	299	7	0	299	7	0	299	7	0	.....
	c. Bámbus	.....	400	13	2	400	13	2	400	13	2	.....
	d. Grazing and fodder grass ...	.....	35,111	0	9	35,111	0	9	35,111	0	9	.....
	e. Other minor produce	.....	4,194	12	6	4,194	12	6	4,194	12	6	.....
	III.—Confiscated, drift and waif wood ...	.....	66	6	7	66	6	7	66	6	7	.....
	Total ...	.....	68,409	4	11	68,409	4	11	68,409	4	11	.....

FORM No. 60—*concluded.*

Division.	Particulars.	Outstandings at commencement of year.	Value of Sales and other Revenue during year.	Total.	Amount realized during year.	Balance due to the Department at end of year.	Remarks.
Sholápur ...	*I.—Timber and other produce removed from the Forests by Government agency—*	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
	a. Timber	.....	143 7 0	143 7 0	143 7 0	.....	
	b. Firewood and charcoal	15 0 0	971 3 3	986 3 3	986 3 3	.....	
	c. Bámbus	.....	0 15 9	0 15 9	0 15 9	.....	
	d. Sandalwood	.....	.....	.....	.....	.....	
	e. Grass and other minor produce ...	.....	24 1 6	24 1 6	24 1 6	.....	
	II.—Timber and other produce removed from the Forests by consumers and purchasers—						
	a. Timber	.....	243 8 6	243 8 6	243 8 6	.....	
	b. Firewood and charcoal	.....	379 14 6	379 14 6	379 14 6	.....	
	c. Bámbus	.....	.....	.....	.....	.....	
	d. Grazing and fodder grass ...	.....	10,534 13 11	10,534 13 11	10,534 13 11	.....	
	e. Other minor produce	*4 0 0	3,984 0 0	3,984 0 0	3,984 0 0	.....	*Rs. 4 have been written off as per Government Resolution No. 3547 of the 8th June 1887.
	III.—Confiscated, drift and waif wood ...	.....	30 14 8	30 14 8	30 14 8	.....	
	Total ...	15 0 0	16,312 15 1	16,327 15 1	16,327 15 1	.....	
Surat... ...	*I.—Timber and other produce removed from the Forests by Government agency—*						
	a. Timber	128 0 0	17,785 8 0	17,913 8 0	17,913 8 0	.....	
	b. Firewood and charcoal	.....	311 2 0	311 2 0	311 2 0	.....	
	c. Bámbus	.....	.....	.....	.....	.....	
	d. Sandalwood	.....	.....	.....	.....	.....	
	e. Grass and other minor produce ..	.....	.. ...	.. ...	.....	.....	
	II.—Timber and other produce removed from the Forests by consumers and purchasers—						
	a. Timber	2,874 7 11	17,229 12 2	20,104 4 1	18,259 4 1	1,845 0 0	
	b. Firewood and charcoal	.....	1,676 5 8	1,676 5 8	1,676 5 8	.....	
	c. Bámbus	.....	13,693 11 8	13,693 11 8	13,693 11 8	.....	
	d. Grazing and fodder grass ...	.....	924 4 6	924 4 6	924 4 6	.....	
	e. Other minor produce	.....	1,021 13 11	1,021 13 11	1,021 13 11	.....	
	III.—Confiscated, drift and waif wood ...	609 13 3	231 8 2	841 5 5	231 8 2	609 13 3	
	Total ...	3,612 5 2	52,874 2 1	56,180 7 3	54,031 10 0	2,454 13 3	

Panch Mahals...	*I.—Timber and other produce removed from the Forests by Government agency—*					
	a. Timber	.....	290 6 0	290 6 0	290 6 0	.....
	b. Firewood and charcoal	.....	4,370 6 0	4,370 6 0	4,370 6 0	.....
	c. Bámbus	.....	1 0 0	1 0 0	1 0 0	.....
	d. Sandalwood	.....	.....	.....	.....	.....
	e. Grass and other minor produce ...	.....	17 4 10	17 4 10	17 4 10	.....
	II.—Timber and other produce removed from the Forests by consumers and purchasers—					
	a. Timber	207 10 0	41,774 13 9	41,982 7 9	41,982 7 9	.....
	b. Firewood and charcoal	.....	836 3 10	836 3 10	836 3 10	.....
	c. Bámbus	.....	467 4 9	467 4 9	467 4 9	.....
	d. Grazing and fodder grass ...	.....	5,321 7 0	5,321 7 0	5,321 7 0	.....
	e. Other minor produce	†20 13 6	2,024 3 9	2,044 8 3	2,028 14 9	15 9 6
	III.—Confiscated, drift and waif wood ...	.....	28 12 3	28 12 3	28 12 3	.....
	Total ...	227 14 6	55,131 14 2	55,359 12 8	55,344 3 2	15 9 6
Total, Northern Circle.	*I.—Timber and other produce removed from the Forests by Government agency—*					
	a. Timber	4,917 8 1	1,90,519 6 8	1,95,436 14 9	1,91,294 5 8	4,142 9 1
	b. Firewood and charcoal	72 2 0	51,822 2 1	51,894 4 1	51,889 12 1	4 8 0
	c. Bámbus	.....	241 12 9	241 12 9	241 12 9	.....
	d. Sandalwood	.....	.....	.....	.....	.....
	e. Grass and other minor produce ...	25 6 7	16,648 3 9	16,673 10 4	16,673 10 4	.....
	II.—Timber and other produce removed from the Forests by consumers and purchasers—					
	a. Timber	3,148 10 11	3,78,254 12 2	3,81,403 7 1	3,02,491 14 1	78,911 9 0
	b. Firewood and charcoal	.....	24,664 3 9	24,664 3 9	24,646 11 9	17 8 0
	c. Bámbus	.....	40,050 5 2	40,050 5 2	40,050 5 2	.....
	d. Grazing and fodder grass ...	3,885 7 4	2,46,089 13 0	2,49,975 4 4	2,48,855 2 6	1,120 1 10
	e. Other minor produce	24 13 6	37,996 0 8	‡38,020 14 2	38,000 11 8	15 9 6
	III.—Confiscated, drift and waif wood ...	613 1 6	4,960 12 4	5,573 13 10	4,960 12 4	613 1 6
	Grand total ...	12,687 1 11	9,91,247 8 4	10,03,934 10 3	9,19,105 2 4	84,824 14 11

†Out of Rs. 20-13-6 annas 9 have been written off the accounts, Rs. 12 have been recovered during the year and Rs. 8-4-6 is the balance unrecovered. Out of 1887-88 sales Rs. 7-5-0 outstand as balance.

‡Out of this amount Rs. 4-9-0 have been written off.

Poona,
The 31st October 1888.

A. T. SHUTTLEWORTH,
Conservator of Forests, Northern Circle.

FORM No. 61.

FOREST DEPARTMENT, BOMBAY, NORTHERN CIRCLE.

Outstandings and Liabilities on account of Contractors and Disbursers for 1887-88.

Divisions.	Department Debtor.			Department Creditor.			Balance due.		Remarks.
	At commencement of year.	Recoveries in cash and value of supplies and work done during year.	At close of year.	At commencement of year.	Payments made during the year.	At close of year.	To Department (Outstandings).	By Department (Liabilities).	
Contractors.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
East Khándesh ...	...	930 0 0	930 0 0	.....	930 0 0	930 0 0	.....	...	
South Thána ...	...	6,500 0 0	6,500 0 0	.....	6,500 0 0	6,500 0 0	.....	...	
Total Contractors ...	...	7,430 0 0	7,430 0 0	.....	7,430 0 0	7,430 0 0	.....	...	
Disbursers.									
Ahmednagar ...	...	40,090 0 3	40,090 0 3	.....	40,090 0 3	40,090 0 3	.....	...	
Khándesh, East ...	...	10,848 9 9	10,848 9 9	159 7 6	10,689 2 3	10,848 9 9	.....	...	
Do. West ...	...	40,495 0 6	40,495 0 6	304 4 5	40,190 12 1	40,495 0 6	.....	...	
Násik ...	...	47,907 3 3	47,907 3 3	6 2 4	47,901 0 11	47,907 3 3	.....	...	
Panch Maháls ...	...	17,356 3 7	17,356 3 7	.....	17,356 3 7	17,356 3 7	.....	...	
Poona ...	...	51,734 3 2	51,734 3 2	.....	51,734 3 2	51,734 3 2	.....	...	
Sátára ...	...	49,734 11 3	49,734 11 3	370 14 0	49,368 6 7	49,739 4 7	4 9 4	...	
Sholápur ...	...	16,746 0 0	16,746 0 0	334 4 2	16,411 11 10	16,746 0 0	.....	...	
Surat ...	...	21,804 5 5	21,804 5 5	.....	21,804 5 5	21,804 5 5	.....	...	
North Thána ...	...	53,055 1 9	53,055 1 9	357 8 4	52,697 9 5	53,055 1 9	.....	...	
South Thána ...	10 0 3	41,206 9 11	41,216 10 2	.....	41,227 13 11	41,227 13 11	1 4 0	0 0 6	
Working Plans ...	...	3,508 1 7	3,508 1 7	.....	3,508 1 7	3,508 1 7	.....	...	
Total Disbursers ...	10 0 3	3,94,486 2 5	3,94,496 2 8	1,532 8 9	3,92,979 7 0	3,94,511 15 9	5 13 4	0 0 6	
Grand Total ...	10 0 3	4,01,916 2 5	4,01,926 2 8	1,532 8 9	4,00,409 7 0	4,01,941 15 9	5 13 4	0 0 6	

No. $\frac{F}{12820}$

Forwarded to the Conservator of Forests, Northern Circle, under Section 238 of the Forest Code.

Bombay, Accountant General's Office,
8th August 1888.

STEPHEN JACOB,
Accountant General.

FORM No. 62.

Forest Department, Bombay, Northern Circle.

Financial Results of the year 1887-88.

Division.	Timber and other Produce removed from the Forests by Government Agency.		Other Revenue.		Formation, Protection, and Improvement of Forests.	Total.		Remarks.
	Receipts.	Charges.	Receipts.	Charges.	Charges.	Receipts.	Charges.	
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
North Thána ...	49,180	14,997	1,68,884	7,923	66,855	2,18,064	89,775	
South Thána ...	30,787	9,789	1,11,802	3,643	84,450	1,42,589	97,882	
East Khándesh ...	16,427	5,057	59,132	5,776	38,603	75,559	49,436	
West Khándesh ...	27,323	6,979	85,913	5,349	53,244	1,13,236	65,572	
Násik	26,818	8,837	55,233	2,833	80,038	82,051	91,708	
Ahmednagar ...	13,379	3,766	32,105	1,491	52,542	45,484	57,799	
Poona	45,929	7,141	47,890	3,223	69,281	93,819	79,645	
Sátára	26,197	11,086	42,635	10,691	55,710	68,832	77,487	
Sholápur	1,155	681	15,289	556	29,733	16,444	30,970	
Surat	18,225	16,491	37,261	10,250	23,240	55,486	49,981	
Panch Maháls ...	4,679	1,920	52,382	1,912	29,048	57,061	32,880	
Total ...	2,60,099	86,744	7,08,526	53,647	5,82,744	9,68,625	7,23,135	

Poona, 31st October 1888.

A. T. SHUTTLEWORTH,
Conservator of Forests, Northern Circle.

No. 3931 of 1888.

From

G. F. SHEPPARD, Esquire,
Commissioner, N. D.,

To

JOHN NUGENT, Esquire,
Chief Secretary to Government,
Revenue Department,
Bombay.

Ahmedabad District, Camp Harsol,
19th December 1888.

Sir,

I have the honour to submit the administration report of the Conservator of Forests for 1887-88, received on the 17th instant. The report is so late that I will not detain it for lengthy remarks.

2. There is an improvement in the net revenue of the year. The four forest divisions with which I am directly concerned are those as per margin, and in these four, the revenue exceeded the expenditure by Rs. 2,42,000, which is a considerable improvement upon last year.

North Thána.
South Thána.
Surat.
Panch Maháls.

3. (Para. 33).—I have taken much interest in the proposals for the Modása Petha. Owing to the character of the population, and to the fact that former restrictions have been little more than nominal, it has been found necessary to introduce the new system gradually, and through the medium of the Revenue Department. The delay in connection with this matter has been owing to the constant changes of Assistants. If the Collector is fortunate enough to retain the services of a European Assistant until the latter can make himself thoroughly acquainted with the petha, forest arrangements will be greatly furthered, and when the time comes for the Collector to hand over charge of these reserves to the Forest Department, he will no doubt be able to give a good account of his stewardship.

4. I am of opinion that the Conservator might have omitted his criticisms on the Forest Commission Report, which is now before Government, and also his familiar arguments regarding the Bombay Harbour, which, in their review of last year's report, Government assured him had already been carefully considered.

5. *Prosecutions.*—The new cases this year in the four above divisions number 319 compared with 163 last year, the chief increase being in South Thána and in Surat. This large increase is not explained, nor is it stated whether all these prosecutions received the sanction of the Divisional Forest Officer. The convictions and acquittals this year are 244 and 60, against 117 and 46 respectively last year, showing by the great decrease of failures more care in bringing cases before the Courts.

6. *Protection against fire.*—Shows an improvement. But it is observable that 5 per cent. of the forests should have been burnt in North Thána, and only 3 per cent. in the adjoining reserves in Násik. The percentage burnt in the four Collectorates is 8 per cent.

7. I am not sure that the "active co-operation of forest villages" which the Conservator expects can be with any confidence relied upon, if only nominal rewards are paid for such assistance. Including such rewards, and the total cost of hired labour, the expenditure on forest protection in the whole Circle was only Rs. 493-3-6. In the Panch Maháls, where as much as 19·2 of the area was burnt, some expenditure would probably be profitable. Not a rupee, however,

was spent there. I notice from last year's report of the Southern Circle in Madras that Rs. 16,823 were expended on special watches, the result being that 96 per cent. of the forests was protected. I think it probable that a little more expenditure in this Presidency would be found to be economical.

8. Another direction in which too much economy appears to me to be practised is that of artificial reproduction. In Madras last year, the sum of Rs. 65,000, being 5 per cent. of the total forest revenue, was expended on plantations, and judging from what I have lately seen of the results there, the expenditure is likely to be largely remunerative.

9. I venture to think that more success generally would be achieved in this Presidency were the sympathies, energies and responsibilities of the Revenue Department more enlisted on the side of conservation; and to this end I should like to see the Divisional Forest Officer more directly under the orders of the Collector in all but the *purely* professional portion of his duties. These officers should be assistants to the Collector, the Conservator's supervision being similar to that exercised by Commissioners. Until the subordinate forest establishments are placed under the Mámlatdárs, the latter will never accept any responsibility in forest matters, nor would it be just to exact such.

10. As this is the last forest administration report I shall review, I desire to record my humble tribute to the zeal, energy and thoroughly hearty devotion to the interests of Government observable throughout the higher grades of that Department. In no branch of the public service are these qualities more conspicuously displayed than by Mr. Shuttleworth and his officers.

I have the honour to be,
Sir,
Your most obedient Servant,
G. F. SHEPPARD,
Commissioner, N. D.

No. $\frac{R}{6308}$ OF 1888.

REVENUE DEPARTMENT.
Poona, 21st December 1888.

Forwarded to Government with the following remarks in regard more particularly to those portions of the report which relate to the Central Division, and to some which are of a general nature.

Chapter I.

Paragraph 25.—Mr. Dodgson's report on the demarcation of the Chálisgaon Táluka in the Khándesh district has been forwarded to Government with this office letter No. $\frac{R}{6129}$, dated 12th instant.

It is very desirable that the forest and waste lands of the Dhulia, Sindkheda, Pimpalner, Navápur, Nizámpur, Nandurbár and Akráni ranges should be selected and demarcated without delay.

Paragraphs 26 and 27.—It is satisfactory to note that forest demarcation work in the Násik and Ahmednagar districts has been completed, but it is to be regretted (paragraph 28) that there has been no special officer for forest demarcation and settlement in the Poona Collectorate. The progress in the acquisition of occupied lands (1,044$\frac{7}{10}$ acres) in the Poona district is a matter for congratulation.

Paragraph 34.—The remarks of the Conservator on the important question of whether or not sufficient provision has been made for fuel and fodder reserves are pertinent and deserving of consideration, and they have the general concurrence of the undersigned.

Paragraph 36.—The report by Mr. Sitárám Dámodhar on the demarcation of 73 villages in the Bhor State, in connection with the silting of Lake Fife, has been submitted to Government with this office No. $\frac{\text{Pol.}}{342}$, dated the 19th instant.

Paragraphs 47 and 48.—The progress made during the year in forest settlements of the old forest areas has been exceedingly good in the Ahmednagar district, as has been also the progress of inquiries into claims of forest rights made by the holders of Inám or alienated villages throughout the Division.

Paragraph 54.—Doubtless Bhils do a great deal of damage to forests, but a great deal has been done to prevent this, by the framing of the N. and S. Tápti Rules. A correspondence on this subject has lately been submitted to Government with this office No. $\frac{\text{R}}{6076}$, dated the 10th instant, and the undersigned has recorded his opinion that, in dealing with Bhils, precipitate action is to be deprecated, and that it is necessary to proceed gradually and cautiously.

Chapter II.

Paragraphs 61 and 62.—Good progress has been made during the year in the forest survey in the Násik District—triangulation square miles 439, traverse square miles 851-7. It is much to be regretted that the Government of India have reduced the scale of the maps from 8 to 4 inches = 1 mile.

Chapter III.

Paragraphs 76 to 90.—The Conservator has very clearly shown the necessity for strengthening the forest establishment, but in consequence of the existing financial pressure there is little hope that this want will be supplied.

Paragraph 96.—The number of prosecutions (709) during the year shows a considerable decrease as compared with those (811) during the preceding year, and the number of acquittals is 171 to 278, thus leading to the inference that there were fewer frivolous complaints.

Paragraph 97.—The undisposed of cases in West Khándesh (39) is much larger than it ought to be, seeing that there were only 79 prosecutions in that Division.

Paragraph 98.—As remarked by the Conservator, Northern Circle, taking all things into consideration, the number of prosecutions cannot be said to be large, "and it is not possible to urge that the forest law is worked with undue severity."

Paragraph 103.—The number of cases compounded under Section 67 of the Forest Act has increased from 4,305 to 5,142; the largest number of such cases is in the Ahmednagar District. The system appears to work well.

Paragraphs 113 and 116.—The percentage (10·8) of forest traversed by fire to the entire forest acreage (56,02,109) in the Division is not large; but it is hoped that it will annually decrease under the orders contained in Government Resolution No. 1942, dated the 24th March 1888, which, however, do not seem to have been applied in the Sháháda, Shirpur, Taloda and Navápur ranges in Khándesh, in which the whole of the reserved forests have been more or less traversed by fire.

Paragraph 121.—The general rise of the water level in tha Sávda and Chopda Tálukas is an interesting fact, and it is, doubtless, the result of improved forest conservancy.

Paragraph 122.—The figures given in this paragraph are certainly wonderful. The grass and grazing revenues of the forests in the Northern Circle have risen from Rs. 42,629 in 1878-79 to Rs. 2,48,855 in 1887-88.

Paragraph 123.—Poona last year contributed the largest amount, Rs. 47,707, but during the year under report, West Khándesh has taken the first place, with, however, a lower figure, Rs. 43,302. Poona stands second with Rs. 38,381, then Násik, Sátára and East Khándesh. The other districts contribute small amounts.

Paragraph 124.—Poona, it appears, furnished the Commissariat Department, during the year, with grass valued at Rs. 25,000, for which no credit is received; so, taking this into consideration, Poona still stands first.

Paragraphs 126 and 127.—The undersigned entirely concurns in the Conservator's remarks on the mischief caused by sheep and goats to grazing in forest reserves: such animals should not be allowed to enter a forest; they can find pasture where horned cattle cannot. Mr. Moore can state from experience that sheep and goats fared well in the famine, when horned cattle died, because the former feed so close that they can eat little shoots of Haryáli and other grass, which are always to be found in bare fields and nálas, in the middle of the hot weather.

Paragraph 128.—The recent Government Resolution No. 8227, dated the 10th instant, sets the question of sheep and goats grazing in forest reserves and Gairan at rest.

Paragraph 130.—The undersigned has an unmitigated objection to prickly pear, generally; but he admits it to be the best fencing for forest reserves, when they are at a distance from human habitations, but the Forest Department should see that it does not spread.

Paragraphs 131 to 134.—Any one who has known the Deccan for a length of time, will readily endorse Mr. Shuttleworth's remarks on natural reproduction. The Khamatgi Ghát, Katraj Ghát, Bámburda, the hills between Salervádi and Talegaon Dábháde are proofs of this. It is useless to multiply instances.

Paragraphs 135 to 142.—Those who have travelled by the West Deccan Railway through the bare inhospitable tract of country in the neighbourhood of Jejuri, may have observed the thick and luxuriant growth of Bábul on the slopes of the railway embankments, which are entirely unprotected. It is recommended that the Forest Department should cause small plots to be dug up here and there all over the bare tracts in those parts, where the land has been included in forest, sow Bábul seeds in the plots, and surround them with prickly pear fences. This would gradually change the face of the country, and the experiment ought not to be expensive.

Paragraph 145.—The undersigned cordially endorses the remarks of the Conservator regarding what some people call "inferior vegetation;" he can state, as a fact, that, in the bare plains of Indápur and Bhimthadi, which are covered with spear grass, good grass fit for grazing is to be found under the shadow of the humble shrub the "Tarvad," which should be studiously propagated in these parts by the Forest Department.

Paragraphs 146 to 153.—The policy which Government have lately inaugurated of opening up, by roads, valleys running from the Western Ghâts will be very beneficial to the Forest Department.

Chapter IV.

Paragraphs 167 to 176.—As the leaves of the Anjan are so valuable as fodder for cattle, more particularly in years of drought, that tree ought not to be felled. It appears that 900 were cut down in the East Khándesh Division during the year; there have also been cuttings of this tree (number not given) in Western Khándesh.

Roughly, 28,758 khandies of firewood were supplied, during the year, from the forests in this Division.

Paragraph 179.—The yield of Hirda (1,002 khandies) was less than in the preceding year (1,328 khandies), the cost of collection was Rs. 6,645 and the receipts were Rs. 13,593, but whether the last figures represent gross or net receipts is not stated.

Paragraph 183.—The "share" system of collecting Hirda, described by the Conservator, appears to be a very judicious arrangement. Every encouragement should be given to villagers in the Ghát villages to propagate this valuable tree. If, instead of denuding lands by Kumri, and cultivating the slopes of the hills with inferior grain like "Náchni" and "Wari", the people could be persuaded to grow Hirda on such land in return for some compensation, say the remission of the revenue, the hill slopes would be clothed with these beautiful and valuable trees, and the people would become wealthy.

Paragraph 192.—It is difficut to prevent the abuses of the permit system in the Khándesh Divisions inhabited by Bhils. The N. and S. Tápti Rules, if worked carefully, ought to be useful in this respect.

Paragraph 200.—Referring to the remarks on paragraph 145, the undersigned thinks that the "Tarvad" shrub should not be cut, but that the growth of the plant should be encouraged in the plains of Poona, Sátára and Sholápur. Instead of this, a revenue of Rs. 9,043 appears to have been derived from this source.

Paragraph 202.—Free grants of timber have decreased in value from Rs. 4,244-5-4 to Rs. 4,049-15-0; but it is curious to observe how closely the value of the grants in the last two years and the preceding year 1885-86 (when the figures were Rs. 3,952-5-10) resemble each other.

Paragraphs 204 to 207.—Doubtless it would be preferable, from a forest point of view, to have no concessions whatever, or to bring them under stricter control; but this must be a work of time, in this Division at least, where forest conservancy is neither thoroughly understood nor appreciated.

Chapter V.

Paragraph 209.—The gross receipts of the year, Rs. 9,68,625-3-5, show an increase over last year of Rs. 53,525.

Paragraph 210.—The principal increases in this Division are in—

	Rs.	a.	p.
West Khándesh	22,333	3	5
East Khándesh	13,670	2	8
Sholápur	9,051	8	11

Paragraph 215.—Expenditure on conservancy works amounted to Rs. 2,26,095-14-1, being an increase of Rs. 17,023-2-3 over the preceding year.

The principal increases in this Division are in—

	Rs.	a	p.
Násik	19,289	2	10
West Khándesh	5,956	14	1
Sátára	5,895	11	0

Chapter VI.

Paragraph 227.—It is pleasant to read that the Eastern ranges in the Ahmednagar District bordering on the Nizám's territory, which were bare in 1877, are now covered by an advanced growth of Bábul and other trees. The mischief done by sheep grazing in the Savantchar Bábul Forest is graphically described by the Conservator.

Paragraph 228.—The border forests in the Yeola and Nándgaon Ranges, along the Satmala Hills, and those of the Chálisgaon Táluka appear to have greatly improved.

Paragraph 230.—The Conservator bears testimony to the fact that "despite the privileges which have obstructed improvement" the Sátpuda Forests, regarded as a whole, have "increased in wealth to an enormous degree."

Paragraph 231.—It has been noted above, in the remarks on paragraphs 26 and 27, that the forest demarcation of Násik has been completed; but Mr. Shuttleworth states and the undersigned reads with much regret, that "the forest demarcation in this natural forest country is very defective, extensive areas of natural forests covering ravines and steep slopes have been left outside the reservations" and that "land, densely covered with magnificent trees, which no plough can ever touch, has been left out, and what might have been a solid continuous block of forest is cut up into several detached blocks." These remarks point forcibly to a revision of the demarcation, for, if land covered with dense forest, and incapable of cultivation, has been excluded from the reserves, surely the mistake ought now to be rectified.

Paragraph 232.—Mr. Moore thinks that the Conservator should be allowed to submit a supplementary forest conservancy scheme for the Peint Táluka, as he remarks that "the Peint Forests have a grand future before them, and they should most certainly be solidified, and made continuous while there is yet time."

J. MOORE,
Officiating Commissioner, C. D.

B 631—29 NC.

SOUTHERN CIRCLE.

No. 3333 of 1888-89.

From

J. L. L. MacGREGOR, Esquire,

Conservator of Forests, Southern Circle;

To

The CHIEF SECRETARY to GOVERNMENT,

Revenue Department,

Bombay.

Conservator's Office, Southern Circle,
Belgaum, 19th October 1888.

Sir,

I have the honour to submit herewith the Forest Administration Report of the Southern Circle for 1887-88, together with its subsidiary statements, as per list appended.

I have the honour to be,

Sir,

Your most obedient Servant,

J. L. L. MacGREGOR,

Conservator of Forests, Southern Circle.

Through the Commissioner, Southern Division.

B 631—2 sc

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SOUTHERN CIRCLE

1887-88.

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FOREST ADMINISTRATION REPORT

OF THE

SOUTHERN CIRCLE, BOMBAY PRESIDENCY,

FOR THE OFFICIAL YEAR 1887-88.

INTRODUCTION.

The results of the past year's working have, I think, been, on the whole, satisfactory. The demand above ghâts for forest produce by the general public has been brisk, prices good, and the gross revenue shows an increase of Rs. 857 over last year's receipts. The falling off (Rs. 50,789) in the nett receipts is mainly due to less teak having been sold to the Railway Company, to fewer teak poles having been cut in Kolába, and to the collapse of the Kodibág timber sales owing to a combination of traders attending them. These sales, which generally produce about Rs. 30,000, have hitherto been held about the middle of March, the terms of the sale being that all purchase-money shall be lodged by the 31st. Buyers have, or had, an idea that the Forest Department must sell the wood, for the sake of revenue, before the commencement of a new financial year, and are apt to hold back in the hope of obtaining the wood at the eleventh hour at very cheap rates. Another matter tending to depress prices is that purchasers do not always like to have to pay the whole of the purchase-money at once, the custom being to pay one-quarter at the time of sale and the balance at the time of removing the wood, which must be removed before the 1st April. These are decided objections to sales so late in the year, and another is that there is little time left for the removal of wood by sea before the stormy season commences. I propose, therefore, in future to have the sale at Kodibág in November.

2. An important event of the year was the survey of a railway line from Nágargáli, on the Southern Marátha Railway, to Potoli, a distance of 21 miles. The line is intended to tap the teak forests in its vicinity, and was surveyed by Mr. Gerrard. In my No. 5498 of the 24th March, 1888, to Government, I recommended that the line should be located further east, be of 24 inch gauge west of Haliyál, and run from the Southern Marátha station of either Alnáwar or Kumbarganvi, through Haliyál to Mainál on the Kálánadi, and thence to Potoli. No decision has yet been come to in regard to the route to be taken, or the gauge to be adopted, in the event of the line's being constructed.

3. With a view to improving the growth of standing stock and to preparing the way for natural regeneration by seed, systematic attempts were made to protect portions from fire and to close portions to grazing for a term of years. Plantations have always been carefully protected; but purely artificial regeneration, on account of its expense and uncertain results, can never afford a satisfactory mode of regenerating our timber forests, which will always be almost entirely dependent on natural reproduction. The exclusion of fires and the regulation of grazing may, therefore, be regarded as problems, on the solution of which the existence of the great majority of the forests of the Circle depends, and if last season our efforts in this direction appear somewhat feeble, they were so only because the funds available were not considered sufficient for more extensive operations.

4. The work of determining the yield of the forests of Kánara was also begun, and the topographical party commenced the survey of the Kánara forests.

CHAPTER I.

AREA AND BOUNDARIES.

5. The following table shows the details for the Collectorates of the Circle :—

No.	Name of Collectorate.	Area on 1st April 1887.				Added during the year.				Excluded or transferred to other Heads.				Area on the 31st March 1888.				Total Forest Area.	
		Reserved.		Protected.		Reserved.		Protected.		Reserved.		Protected.		Reserved.		Protected.			
		Square Miles.	Acres.	Square Miles.	Acres.	Square Miles.	Acres.	Square Miles.	Acres.	Square Miles.	Acres.	Square Miles.	Acres.	Square Miles.	Acres.	Square Miles.	Acres.	Square Miles.	Acres.
1	Kánara ..	683	446	2,864	631	..	..	..	..	..	..	..	..	683	446	2,864	631	3,548	437
2	Belgaum ..	492	82	197	223$\frac{9}{40}$	..	33$\frac{9}{40}$	..	32$\frac{1}{2}$	..	14$\frac{29}{40}$	..	212$\frac{9}{40}$	492	100$\frac{1}{2}$	197	43$\frac{3}{4}$	689	144$\frac{1}{2}$
3	Dhárwár ..	171	425	260	261	..	..	..	..	..	14$\frac{17}{40}$	..	2	171	410$\frac{23}{40}$	260	259	432	29$\frac{23}{40}$
4	Kolába ..	299	471$\frac{13}{40}$	88	620$\frac{3}{4}$	..	..	..	..	5	479$\frac{38}{40}$	..	..	293	631$\frac{13}{40}$	88	620$\frac{3}{4}$	382	612$\frac{1}{40}$
5	Bijapur ..	155	115	..	364	..	..	..	..	..	39$\frac{7}{40}$	..	..	155	75$\frac{33}{40}$	..	364	155	439$\frac{33}{40}$
6	Ratnágiri ..	20	13	..	..	..	..	..	..	..	4$\frac{5}{16}$	..	..	20	8$\frac{5}{16}$	..	..	20	8$\frac{5}{16}$
	Total ..	1,822	272$\frac{11}{16}$	3,412	180	..	33$\frac{9}{40}$	..	32$\frac{1}{2}$	5	553$\frac{13}{16}$	..	214$\frac{9}{40}$	1,816	392$\frac{1}{40}$	3,411	638$\frac{21}{40}$	5,228	390$\frac{1}{2}$

KA'NARA.

6. Although there was no change of area or classification in Kánara, 37,995 acres and 21 gunthás of the forest lands of the Sirsi sub-division, which had been previously notified under section 34 of the Forest Act, were gazetted under section 4. These lands were selected by the Divisional Forest Officer, Southern Division of Kánara. He also selected lands for forest in eight villages of Sirsi and six of Honávar.

7. The Forest Settlement Officer reports that he is about to submit settlement proposals for 46 villages of Sirsi, 21 of Honávar and 16 of Kumta, and that he completed the demarcation of 20 miles of boundaries in Mundgod, of 33 in Sirsi, and of 12 in Haliyál.

BELGAUM.

8. In Belgaum, 33 acres 9 gunthás and 32 acres 30 gunthás were brought under sections 19 and 28 of the Forest Act, respectively; while 14 acres 29 gunthás were disforested in the reserved, and 212 acres 9 gunthás in the protected, forests. These disforestments were chiefly owing to rectifications of the original notifications.

9. For the same reason, 14 acres 37 gunthás were disforested in the reserved forest of Nargund in Dhárwár. Two acres were also excluded from the protected forests of Gadag, the land being required for a public road.

KOLA'BA.

10. Five square miles and 479$\frac{38}{40}$ acres were excluded from the reserved forests in Kolába, where Mr. Sinclair continued to be Forest Settlement Officer until 1st June 1887, on which date the settlement office was abolished. He submitted settlement reports on the Pen, Nágothna and Roha sub-divisions, which are now with Government.

11. The following boundary-marks were erected in the Pen, Nágothna and Roha sub-divisions :—

5,813	new cairns.
2,348	old do.
84	do. do. repaired.
201	dhali cairns.
7	ordinary stones.

BIJA'PUR.

12. In Bijápur, 39 acres and 7 gunthás of the reserved forests in Indi were disforested, and 142 acres 6 gunthás were notified under section 4 of the Forest Act. Mr. Tucker submitted reports on the forests still remaining to be finally notified, and the orders of Government on them are awaited.

13. At the close of the year the office was abolished.

RATNÁGIRI.

14. Four acres and 28 gunthás of the existing area were disforested and, as no adequate results were to be expected from a continuance of the settlement office, it was abolished from 1st March, 1888, by order of Government.

15. The State forests of Ratnágiri are generally scattered, of poor quality, and cut up by private or semi-private lands which cannot well be interfered with. Most of the forests of the Collectorate are in private hands and subjected to *ráb*, or to kumri cultivation, which must sooner or later destroy them, as it has already destroyed vast expanses of the surrounding country within quite recent years. The Khed Forester informed me that the whole of the district between Khed and Chiplún was densely stocked with forest ten years ago, and that tigers were then met with. Now there would be scarcely cover for a hare if it were not for the grass. Nothing short of expropriating hundreds of square miles of ghát land, or of notifying them under section 35 of the Forest Act, could possibly be of any avail in arresting the devastation of these hills, the 20 square miles of scattered Government forests being a *quantité négligeable* when it comes to a question of climatological influences. The application of either of these possible remedies for this unsatisfactory state of affairs would be extremely unpopular, and, I imagine, politically quite impracticable. A chance of amelioration may perhaps come when the Khots throw up their lands as soon as they are no longer able, or willing, to pay the assessment.

16. The expenditure incurred in connection with the demarcation and settlement of forests during the year amounted to Rs 31,738-7-3, as detailed below:—

		Rs.	a.	p.
(1)	Salaries and allowances of Forest Settlement officers not charged against the Forest Department ...	18,187	9	11
(2)	Salaries and travelling allowances of the establishments employed under the Forest Settlement officers and contingent expense charged to "Forests" ...	13,550	13	4
	Total ...	31,738	7	3

CHAPTER II.

SURVEYS AND WORKING PLANS.

I.—SURVEYS.

17. The Topographical Survey continued its operations, on the 8-inch scale, in the most valuable forests of the Northern Division of Kánara in the neighbourhood of Gund and the proposed railway.

18. Colonel Hutchinson reports the following results for the season:—

Forest Survey on the 8-inch scale.

	Area surveyed	Field Cost.		Cost of 113 Square Miles, completed Survey.
		Rs.		Rs.
Triangulated	150	3,881	Triangulation of 113 square miles.	2,916
Traversed	220	17,307	Traverse of 113 square miles ...	8,531
Plane-tabled	113	7,859	Plane-table of 113 square miles ...	7,859
Total field expenditure ...		29,047	Total field cost of 113 square miles, completed survey	19,306
Estimated recess expenditure ...		8,992	Approximate recess expenditure for 113 square miles	8,992
Grand Total ...		38,039	Grand Total ...	28,298
			Mileage rate ...	250

19. This is undoubtedly a very high rate of expenditure and I feel by no means certain that there will be a material reduction of cost by the adoption of the 4-inch scale. In my opinion, the method pursued is a great deal too elaborate. For practical purposes, all we require is an accurate delineation of forest boundaries. Traverses through thick jungle along boundaries, which separate one village from another but do not represent forest boundaries, might be dispensed with without in any way detracting from the utility of the maps for forest work; and so might contour lines. It is these details that occupy so much of the time of the superior staff and necessitate the wasteful felling of much valuable timber. It is not worth the expense of making numerous cart-tracks for the sake of a few trees here and there, so most of the wood cut by the survey party is wasted. There is a natural tendency to over-elaboration on the part of a highly-trained staff which is not satisfied unless it can "finish" its maps. But all this finishing and interior detail, without adding to their usefulness for forest work, adds very considerably to the cost, and probably quadruples it.

2.—WORKING PLANS.

20. Last November, Government ordered the preparation of a working plan for the 200 square miles, or so, of forests which would be tapped by a railway running from Nágargáli, on the Southern Marátha Railway, to Gund, a distance of 30 miles.

21. As this will be the first attempt to regulate the yield of these timber forests, which are the most valuable in Kánara, on a well defined basis, I propose to give here a short account of the method which should, in my opinion, be followed in determining their yield.

22. A thorough examination of the standing stock and a complete working plan for so large an area of timber forest would take many years, while the immediate and pressing object of Government—the determination of the sustained yield of the forests which would be tapped by the proposed railway—would be practically attained by a less elaborate procedure. I propose, therefore, to calculate the contents and increment of the standing stock by the measurement of each growing, or marketable, tree above 10 inches diameter at breast-height on 5—6 per cent. of the area of each compartment, and to deduce from the result the contents and increment of the forest on the whole area. In this manner, a sufficiently accurate preliminary estimate can be arrived at of the number of trees that can be felled annually without trenching on the capital stock. When the whole area has been examined in this way the test plots can be enlarged, if necessary, the area can be split up into smaller units (called working-circles) and a detailed plan can be prepared for the exploitation, regeneration and protection of each such unit; but, for the moment, I take it, that an expeditious mode of roughly determining the sustained yield is of the first importance. The forest varies a good deal as regards the relative proportion and distribution of species, but sudden changes are not met with, the rule being broad bands of tolerably uniform forest: through these bands long lines, traversing the compartments from end to end, are run, and the diameters of all trees are measured within 20 yards of each side of the lines. The diameter classes proceed by differences of an inch. Each valuable species is put into separate groups comprising trees of diameters (1) 11—15 inches, (2) 16—20 inches, (3) 21—25 inches, and so on. For each group the diameter of a tree of average diameter is calculated, and test-trees of diameters so found, of average size and form, are felled for each group and accurately measured for timber, firewood and increment. $\frac{1}{4}$ per cent. of the trees of the test-plot for the class 11—15 inches, $\frac{1}{2}$ per cent. for those of the second class, and 1 per cent. for all higher classes are felled and measured, and the results for each class are deduced from the results for the whole test-plot, and then for the whole area. Trees that are so decayed, or so damaged by fire, as to have little or no value are neglected and only those dead trees which are already of marketable size are taken into account.

23. Trees of 25 inches diameter at breast-height may be considered good marketable trees. All trees of, or above, that size may, therefore, be considered

exploitable and must last until the trees of the class 21—25 inches shall have grown into the class 26—30 inches. If the inferior classes be found deficient in numbers, a proportionately longer period will have to be allotted to the cutting of the classes of 25 inches diameter and over; and, contrariwise, if the enumeration of the inferior classes shows that they are proportionately much in excess, more of the superior trees may be cut at starting. It was not considered necessary to measure trees under 10 inches diameter, but perhaps it would not be amiss to include the class 6—10 in the calculation.

24. On these lines Messrs. Bell and Oliver, Assistant Conservators, commenced, last January, the enumeration of trees and the description of compartments in the jungles near Aurli and Bámniyé, respectively. Mr. Bell measured the diameters of the trees on 409 acres, and Mr. Oliver tested 620 acres of forest. Both suffered severely from dysentery, and, partly owing to sickness and partly to their being new to the work, progress was unsatisfactory in the extreme. The test-plots examined represent, at 6 per cent. of the whole, an area of 17,000 acres.

25. Mr. Bell was assisted by Mr. Sátárávála, Acting Sub-Assistant Conservator, who worked well under trying circumstances, and who is a painstaking and intelligent officer.

26. The forms A., B., C., appended to this report, indicate the method of computation prescribed. Soon it will be unnecessary to continue the calculation of the yield of firewood, which may safely be taken at a fixed average percentage for each species and age class. The estimates in form C., and most of those in form B., are made out during the rains when the establishment has nothing else to do.

BELGAUM.

27. Mr. Murray estimated the contents of 43,967 acres of forest in the Khánápur táluka within workable distance of the railway.

28. He examined each compartment, and estimated its yield from data previously collected of the yield of compartments similarly stocked. The sizes of compartments vary from about 20 to 150 acres, and the forest consists mainly of *Inga*, *Lagerstræmia* and *Terminalia*-coppice, 40 years old, which furnishes excellent firewood and coppices well. A revolution of 30 years has been decided on, as at that age the coppice is of a size suitable for railway-faggots.

29. Although the method of estimating the standing stock employed by Mr. Murray makes no pretensions to great accuracy, I think it will suffice for present practical purposes. There is no fear of exhausting the supply of firewood required by the public generally, but the increasing demand by the Railway Company for wood-fuel rendered it advisable to prepare a rough estimate of the quantity of wood available annually within reach of the line. No special officer being available, Mr. Murray undertook the work in addition to his duties as Divisional Officer, and carried it out in a most painstaking and satisfactory manner. The result shows that we may cut yearly on the area examined 33,573 tons of 68 cubic feet without trenching on the standing capital of the forest necessary to afford that yield. This represents a yield of 21·4 tons to the acre. In order to be on the safe side, it has been decided to cut only 30,000 tons annually until further experience shows that more may be cut with safety.

DHA'RWA'R.

30. The trees on 3,438 acres in the vicinity of Bandur were counted. The forest consists chiefly of teak poles, 30—40 years old, for which there is a considerable demand for the houses of well-to-do people in the Dhárwár District.

CHAPTER III.

PROTECTION AND IMPROVEMENT.

BREACHES OF THE LAW.

31. The number of prosecutions with particulars is given in the following statement :—

Collectorates.	1886-87.			1887-88.			Percentage of Failure.	
	Cases in which conviction was obtained	Cases in which conviction failed.	Total.	Cases in which conviction was obtained	Cases in which conviction failed.	Total.	1886-87.	1887-88.
Kánara	12	5	17	33	12	45	29	26
Belgaum	8	4	12	7	6	13	33	46
Dhárwár	5	6	11	7	2	9	54	22
Kolába	61	17	78	22	8	30	21	26
Bijápur	10	3	13	1	3	4	23	75
Ratnágiri	19	2	21	5	2	7	9	28
Total ...	115	37	152	75	33	108	24	31

32. There is a decrease of 44 cases for the whole circle, and the percentage of failure increased from 24 to 31 per cent. The decrease is mainly due to diminution in the number of prosecutions on account of illegal dhali cultivation in Kolába.

33. The cause of the increased number of failures is not apparent, but it would certainly be conducive to success if Rangers were allowed to take their cases at once into Court without first obtaining the permission of the Divisional Forest Officer.

34. The following cases were compounded :—

	Collectorates.	1886-87.			1887-88.		
		Number of Cases commuted.	Amount of Fines recovered.		Number of Cases commuted.	Amount of Fines recovered.	
			Rs. a. p.			Rs. a. p.	
1	Kánara	46	344 9 4		55	486 8 7	
2	Belgaum	35	199 12 6		37	107 13 4	
3	Dhárwár	47	126 3 1		55	103 8 4	
4	Bijápur	138	303 0 0		310	231 6 6	
5	Kolába	130	1,299 4 1		140	515 0 7	
6	Ratnágiri	42	63 8 9		55	97 13 10	
	Total ...	438	2,336 5 9		652	1,542 3 2	

35. The remarkable increase in Bijápur cannot be traced to any particular cause.

36. A statement showing the number of cases compromised under the Forest Act, as well as taken into Court, is given below, as directed in Government Resolution No. 3527 of the 2nd May 1884 :—

	Collectorates.	Taken into Court.		Compromised under Section 67.		Total Number of Cases.	
		1886-87.	1887-88.	1886-87.	1887-88.	1886-87.	1887-88.
1	Kánara	17	45	46	55	63	100
2	Belgaum	12	13	35	37	47	50
3	Dhárwár	11	9	47	55	58	64
4	Kolába	78	35	130	140	208	175
5	Bijápur	13	5	138	310	151	315
6	Ratnágiri	21	7	42	55	63	62
	Total ...	152	114	438	652	590	766

37. Out of the 114 cases taken into Court, 5 in Kolába and 1 in Bijápur were not disposed of at the end of the year.

FOREST FIRES.

38. Forest fires were almost as prevalent as ever.

39. Fire-traces were burnt round 81,352 acres of jungle and 78,662 acres were successfully protected at a cost of Rs. 1,063-11-6. The great apparent diminution of the area protected during the past season is due to the fact that only those areas are shown as protected for which special precautions were taken by fire-tracing and guarding. Hitherto the practice has been to include in the statement all areas alleged by the Rangers to have escaped fire but for the protection of which no special precautions were taken. Measures are being taken to afford more extensive protection in future, but in the large, compact forests of this Circle it will be necessary, if we are to succeed, to make the villagers in a measure responsible for fires occurring in the forests of their villages. They might be charged a double grazing-fee for cattle during the season following a fire, the perpetrator of which was not detected. This double charge would, after all, be only 4 annas for each cow or bull, and would not be seriously felt by the villagers although it would probably have a deterrent effect on them. It is they who set fire to the forests and if our efforts are to have a chance of success they must be made to understand that, with or without their consent, it is the intention of Government to put a stop to such proceedings.

40. The following statement shows the areas in which protection from fire was specially attempted, the degree of of success attained, and the cost :—

Division.	Forest Tracts.	Year in which protection commenced.	Area actually protected up to 15th June 1887.	During Dry Season 1888.			Cost during the Season.
				Area attempted to be protected.	Failures.	Actually protected.	Rs. a. p.
Southern Division of Kánara.	Bhedasgaon	1887-88.	...	1,157	...	1,157	23 0 0
	Togarhalli		...	1,880	...	1,880	
Belgaum ...	Nandi and Sundi	1886-87.	1,075	1,075	...	1,075	26 15 0
	Kátgáli	1887-88.					
	Manturgi	1884-85.					
	Sáwargáli, Nágargáli and Potoli ...	1886-87.	1,991	1,991	...	1,991	121 1 0
	Satnal	1887-88.					
	Biranholi	1883-84.					
	Máwanur and Rustumpur	1885-86.	2,985	2,985	...	2,985	39 6 0
	Daddi	1886-87.					
	Konnur, Dégaon, Táwag and Gokák.	1887-88.	6,116	6,116	...	6,116	117 6 0
Northern Division of Kánara.	Bomanhalli, Kulgi and Bámane ...	1887-88.	...	65,067	2,690	62,377	167 0 0
	Barchi, Singatgeri, Bomanhalli, Kadrá, Mardi and Sulgéri plantations	...	...	1,081	...	1,081	568 15 6
	Grand Total ...	...	12,167	81,352	2,690	78,662	1,063 11 6

41. The Divisional Officers, excepting those of Northern Kánara, Southern Kánara, and Belgaum, have sent in the usual perfectly unreliable returns of areas protected, for the protection of which no special measures were taken, and it is useless to submit such returns.

42. The Divisional Officers report that fires were on the whole less numerous, owing, probably, to the rain which fell in January and kept the vegetation damp later into the season than usual.

GRAZING AND FENCING.

43. No system of closure has yet been introduced for grazing excepting in a few areas in Kolába, where 862 acres were closed to grazing this year; in Belgaum, where the firewood-coupes are closed to grazing for 10 years at a time, and now aggregate 12,167 acres; and in Dhárwár, where 967 acres and 33 gunthás were closed. By degrees, it is hoped that about $\frac{1}{4}$th of the forest area of the Circle will always be closed to grazing and about $\frac{3}{4}$ths always open.

NATURAL REPRODUCTION.

44. By seed has not improved since last report, and cannot improve until means are found to prevent incendiarism. As already observed, it is proposed to extend the specially protected areas next season, and to ask Government to sanction the punitive measure referred to in paragraph 39.

45. Reproduction from stools in the firewood cuttings is generally very good.

ARTIFICIAL REGENERATION.

KA'NARA.

46. In the Northern Division of Kánara 11,000 casuarina seedlings were planted out on the sea-shore between Kárwár and Ankola. Of these 500 are reported to have died during the hot season: the remainder are in a healthy condition. A nursery containing 16,000 seedlings was also made there.

47. In the Central Division of Kánara, 19 acres and 15 gunthás of the land given out for kumri cultivation, were planted with 719 harda and 15,325 Divi-Divi plants. Of these, only 32 of the former and 586 of the latter have survived. The experiment in Kumri planting is not a success.

BELGAUM.

48. The Divisional Officer reports that the number of plants still struggling on in the kumri lands, continues to diminish.

BIJA'PUR.

There are two plantations, one at Mamdápur in Bágalkot and the other at Anantpur in Bádámi. In the former, 3,000 Nim, 1,000 bambu, 300 Divi-Divi, 140 sandal, 800 Sirsal and 100 harda plants were put down. Of these, 40 harda, 100 Nim and 50 Divi-Divi died. A nursery of 15,483 seedlings of various kinds was formed.

49. At Anantpur 923 Nim plants were put out, 723 of which survived, and a nursery containing 5,485 Nim and 323 Mashwal seedlings was made.

50. At Shivapur in Bádámi, an experiment was made to grow plants without watering them. Of the 3,392 Nim seedlings put down about 1,800 seedlings have survived so far.

RATNA'GIRI.

51. In the Dápoli and other plantations 7,010 seedlings of various kinds were transplanted from nurseries: of these 1,441 have died. 9,400 seedlings were raised for planting out during 1888-89.

52. On the whole, plantations are not a great success, and I am inclined to think that the sums they cost would be more usefully spent in sowing seeds broad-cast in open scrub-jungle, and in simply protecting existing jungles.

THINNINGS.

53. Thinnings were made in the casuarina plantations at Kárwár, Mardi and Sulegeri of the Northern Division of Kánara. The trees that were cut down fetched Rs. 788.

CUTTING CREEPERS, &c.

54. On all the coupes exploited by means of clean cuttings, all inferior species not valuable as firewood, or otherwise saleable, were girdled and left to die.

COMMUNICATIONS AND BUILDINGS.

55. A sum of Rs. 5,291-7-6 was expended on works under this head.

56. In the Northern Division of Kánara, the Forest road between Bhagwati and Potoli was repaired (Rs. 100) and Range offices in Halyiál and Supa were constructed (Rs. 1,399).

57. In the Central Division of Kánara, the roads between Udamaki and Kannigeri and Hittalkargade and Mágod were repaired (Rs. 162).

58. In the Southern Division of Kánara, a road from the Manchikéri-forest to the Singanhalli timber-depôt was made (Rs. 181), and two new watch-houses were built (Rs. 600).

Belgaum Division.

59. The forest road between Londe and Hemádgé, commenced in the previous year, was completed (Rs. 852), as well as the watch-houses at Nágargáli and Hemádgé (Rs. 1,058).

60. In Ratnágiri the road leading to the Bánd reserves was repaired (Rs. 40).

CHAPTER IV.

YIELD AND WORKING.

DEPARTMENTAL OPERATIONS.

61. The forests of this circle are exploited either departmentally, or by merchants, who buy the standing stock at so and so much per cubic foot, or per 100 trees, of timber; or at so and so much per khandi, or per 100 cubic feet, of stacked firewood.

62. The timber growing below ghâts is sold standing in this manner by tender or auction-sale to the highest bidders. All firewood below ghâts is also sold standing, the material being cut by the purchasers, brought by them to depôts on the rivers and creeks, there measured up by the Forest Department and exported to towns on the coast, notably Bombay.

63. Above ghâts almost all wood exploited for sale to the public is brought to a depôt (nearly all timber, some poles: a great deal of firewood) or sold on the site of the coupe (much firewood, many poles, a very little large timber) by departmental agency.

64. The system of selling wood standing is not altogether satisfactory. It leads to many disputes and even litigation, and is much more likely to lead to fraud than departmental operations, but the Divisional Officers are wedded to it in certain districts, and consider that departmental cuttings would be less profitable below ghâts owing mainly to there being little demand for the purchase for local consumption of either timber or firewood, which would make it difficult to sell all the wood on the spot by auction.

65. The only departmental depôt below ghâts is at Kárwár, where the teak logs, cut on the higher slopes of the Kálánadi in the vicinity of Gund and floated down the river to the depôt, are sold by auction.

66. About 2,000 acres of firewood jungle, with a sprinkling of poles and larger timber, are exploited annually in Belgaum. This wood is sold departmentally at fixed rates, and inclusive of minor produce, yields a nett return of Rs. 1-14-0 per acre per annum, or, say, five times as much as the land—which is of the dry, ghát-crop description—would be assessed at for agricultural purposes.

67. The following is an estimate made by Mr. Murray of the sustained yield of the fuel reserves examined by him and referred to in paragraph 27 :—

Area of selected tract—43,967 acres.

	Total Area.	Per Acre.
	Rs.	Rs. a. p.
Annual Receipts.		
30,000 tons (2,04,00,000 cubic feet) of fuel at Rs. 6-4-0 per 100 cubic feet	1,27,500	
1,000 tons (67,000 cubic feet) of lighting-wood at Rs. 4-8 per 100 cubic feet	4,500	
1,000 cart-loads of small scrap wood at 8 annas per cart-load ...	500	
400 khandis (5,000 cubic feet) of junglewood logs from cuttings at Rs. 7 per khandi	2,800	
1,200 khandis of hirdas at average rate of Rs. 8 per khandi ...	9,600	
Grazing fees (excluding land revenue share)	868	
Stone, earth, sand, &c.	1,000	
Wood given on seigniorage fee	218	
Bambus from the cuttings	200	
Total ...	1,47,186	3 5 6·7
Annual Expenditure.		
30,000 tons (2,04,00,000 cubic feet) of fuel at Rs. 3-12-0 per 100 cubic feet	76,500	
1,000 tons (67,000 cubic feet) of lighting-wood at Rs. 2 per 100 cubic feet...	2,000	
400 khandis (5,000 cubic feet) of junglewood logs from cuttings at Rs. 1-2-0 per khandi	450	
1,200 khandis of hirdas at average rate of Rs. 2-14-7... ...	3,493	
Remuneration to village officers on account of grazing collection ...	67	1 7 6·4
Total ...	82,510	
Nett Profit ...	64,676	1 14 0·3

68. All wood granted free is cut in places convenient for the grantees, under the supervision of the Forest Department, excepting wood in Kánara, where small timber may be cut without permission by the villagers for their own use. People also have the privilege, on payment of a fee of 4 annas per cart-load in Kánara and of 8 annas elsewhere, to cut and collect dry firewood themselves. This system is paramount in Kánara and Bijápur, and was a few years ago the only method of exploitation followed in the Circle. It has great drawbacks, as the cartmen are necessarily spread over a very large area and the proper cutting of trees, as well as protection from fire and theft, cannot, therefore, be insured: the labour of the men engaged is also half-wasted in searching for suitable wood, and, during the time they are so employed, and while they are cutting the trees, their bullocks remain idle; again, the wood procurable is seldom dead and weighs more than the air-dried wood of the departmental cuttings. It is, therefore, not to be wondered at that the cartmen generally prefer to give Rs. 1-4-0 to Rs. 1-8-0 for a ready-made load on the departmental coupes to collecting the wood themselves at 8 annas a load, and that the latter mode of exploitation has greatly decreased since the introduction of the departmental system. Govern-

ment also benefits financially by departmental cuttings: the stacks cost 5—6 annas each, including supervision, leaving a nett profit over the permit system of 6—11 annas a load.

69. The demand for fuel by the railway increased during the year to 45,743 tons from 21,539 tons in 1886-87. A ton is 68 cubic feet of closely-packed wood, cut into 18 to 24-inch billets not less than 3, nor over 8, inches in diameter. It is equivalent to two cart-loads. The cost of cutting and stacking is Rs. 2 a ton, and the sale-price Rs. 4; but as the cuttings get further and further away from the line, profits will decrease and not improve until the cuttings come back to the older coupes. For this reason, I am anxious to come to an arrangement with the Company by which it shall agree to take not less than 25,000 tons annually for the next few years, which would justifiy our getting out ten or twelve miles of portable tramway to work the forests with; but the Company does not seem willing to give any promises, and so an arrangement, which might be mutually beneficial, hangs fire.

70. The following table is a summary of the yield of the forests:—

	Description of Produce.	1886-87.		1887-88.	
		Number.	Cubic feet.	Number.	Cubic feet.
Northern, Central, and Southern Divisions of Kánara.	Teak	...	3,00,971	...	2,56,596
	Do. adzed sleepers	...	...	2,009	...
	Do. round pieces	35,565	...	46,164	...
	Do. poles or pieces	15,972	...	10,788	...
	Blackwood	...	5,103	...	7,999
	Do. poles	28	...	...	...
	Sandalwood ... Khandis.	19-12-2	...	111-6-9	...
	Do. white wood chips...Carts.	½	...	12 seers.	...
	Jungle-wood	...	3,71,110	...	3,97,605
	Do. poles	11,711	...	7,313	...
	Jaráitiwood pieces	643	...	1,089	...
	Do. stacks	...	...	153	...
	Firewood ... ... Tons.	16,659	...	21,777¾	...
	Do. ... ... Cubic feet.	11,67,160	...	10,62,965	...
	Do. ... ...Head-loads.	1,75,146	...	1,93,473	...
	Do. ... ... Cart-loads.	6,332	...	7,904½	...
	Do. ... ... Stacks.	1,787	...	635	...
	Charcoal ... ... Khandis.	508-10	...	332-8	...
	Myrobalans ... Do.	4,816-3	...	3,987-5-10	...
	Shigekái ... ... Do.	61-12-20	...	124-19-22	...
	Do. bark ... Do.	542-5	...	900-66	...
	Bambus	34,81,791	...	41,97,415	...
	Karvi ... ...Head-loads.	1,513	...	587	...
	Ratan ... ... Do.	674	...	709	...
	Creepers for baskets ... Do.	1,643	...	142	...
	Grass ... ... Bundles.	77,600	...	78,900	...
	Gayliwood pieces	...	...	100	...
	Baini trees	59	...	390	...
	Teak tree	...	...	1	...
	Blackwood...	...	...	1	...
	Mango tree	...	...	2	...
	Reeds	...	...	34,450	...
	Props for fencing	...	...	214	...
	Earth ... ... Cart-loads.	61	...	92	...
	Síbs	8,650	...	3,200	...
	Palmyra trees	89	...	111	...
	Thorns ... ... Cart-loads.	16	...	11	...
	Hadcháli leaves ... Loads.	...	...	53	...
	Heart of palm ... Do.	...	...	85	...
	Junglewood ... Planks.	9	...	...	...
	Khaira wood ...Head-loads.	6	...	...	...
	Dry bambus ... Cart-loads.	208	...	...	...
	Teak slabs...	690	...	...	...

	Description of Produce.	1886-87.		1887-88.	
		Number.	Cubic feet.	Number.	Cubic feet.
Belgaum Division.	Teak logs	88	...	42	203
	Do. round pieces	8,060	...	4,273	...
	Branch-wood from above ...	1,968	...	2,596	...
	Slabs	14,849	...	2,335	...
	Sandalwood	2	...	9	20
	Do. ... ... Pieces.	2	...	4	...
	Blackwood	17	...	38	310
	Junglewood	4,608	507	4,910	22,516
	Do. poles	19,224	...	16,238	...
	Nim trees	3	...	...	...
	Firewood ... ... Stacks.	12,375	...	19,664	...
	Do. ... ... Cart-loads.	2,950	...	4,449	...
	Do. ... ...Head-loads.	1,16,293	...	1,15,633	...
	Do. ... Bullock-loads.	429	...	715	...
	Do. ... Donkey-loads.	...	...	6	...
	Do. ... ... Cubic feet.	...	14,64,645½	...	28,93,020
	Charcoal ... ... Maunds	140	...	532	...
	Lighting-wood	...	...	...	2,000
	Sample-wood	...	...	...	5,440
	Myrobolans ... Khandis.	6,488	...	6,923	...
	Shigekái ... ... Do.	375	...	300	...
	Bambus, large and small ...	4,09,159	...	7,19,916	...
	Trunks ... ... Cart-loads.	54	...	...	...
	Cinnamon... ... Maunds.	...	...	400	...
	Coffee ... ... Seers.	20	...	10	...
	Tamarind ... ... Maunds.	10	...	546	...
	Gum ... ... Do.	35	...	1,050	...
	Tarwad bark Bullock-loads.	148	...	132	...
	Do. ... Head-loads.	...	...	503	...
	Banadurgi leaves ... Do.	...	...	83	...
	Thorns ... ... Cart-loads.	78	...	90	...
	Do. ... Bullock-loads.	...	...	115	...
	Do. ... ...Head-loads.	171	...	279	...
	Toddy-trees, sale of	88	...	4	...
	Do. tapping-fees ...	91	...	61	...
	Honey ... ... Maunds.	50	...	108	...
	Stones	...	95,643	...	10,19,536
	Do. ... ... Cart-loads.	5,605	...	8,497	...
	Do. ... Bullock-loads.	820	...	3,983	...
	Earth ... ... Baskets.	...	...	21	...
	Do. ... ... Cart-loads.	105	...	...	...
	Grass ... ... Bundles.	100	...	415	...
	Agricultural implements ...	...	...	9	...
	Karvi ... ...Cart-loads.	267	...	228	...
	Ratan ... ...Head-loads.	234	...	148	...
	Sand	...	32,593	...	...
Dhárwár Division.	Teak rafters	14,888	...	13,570	...
	Matti do.	1,848	...	1,516	...
	Jaráitiwood	18,384	...	21,401	...
	Sleepers	5,146	...	32	...
	Unsound sleepers ... Pieces.	74	...	37	...
	Slabs	6,818	...	11	...
	Ulkas	...	...	1,000	...
	Firewood ... ... Stacks.	6,752	...	10,982	...
	Do. ... .Cart-loads.	397	...	224	...
	Do. ... Donkey-loads.	1,765	...	2,583	...
	Do. ... ...Head-loads.	17,817	...	18,274	...
	Bambus	3,69,674	...	3,21,709	...
	Do. dry	6,161	...	...	...
	Do. do. ... Cart-loads.	...	...	11	...
	Thorns ... ... Loads.	1,330	...	2,076	...
	Stones ... ... do.	4,111	...	4,419	...
	Do. ... ... Cubic feet.	...	2,200	...	...

	Description of Produce.	1886-87.		1887-88.	
		Number.	Cubic feet.	Number.	Cubic feet.
Dhárwár Division—*contd.*	Sandalwood billets	1,678	Khandis. 22-8-18	2,148	Khandis. 38-0-16
	Do. pieces and roots ...	80	...	38	...
	Do. chips and saw-dust ...	...	6-3-4	...	...
	Grass ... ... Pullies.	19,345	...	3,805	...
	Hirda ... ... Khandis.	3-4-5	...	5-15-19	...
	Earth ... ... Cart-loads.	327	...	16	...
Bijápur Division.	Timber ... ... Cart-loads.	152	...	...	...
	Do. ... ... Cubic feet.	...	557	...	...
	Do. ... ... Pieces.	17	...	20	...
	Sandalwood ... Do.	20	...	...	...
	Jantis ... ...Head-loads.	6,471	...	4,189	...
	Shindi trees	400	...	...	...
	Firewood ... ... Cart-loads.	3,702	...	2,542	...
	Do. ... Bullock-loads.	4,899	...	4,189	...
	Do. ... Donkey-loads.	13,316	...	12,289	...
	Firewood ... Horse-loads.	242	...	137	...
	Firewood ... ...Head-loads.	1,25,898	...	94,903	...
	Do. ... ... Pieces.	...	...	20	...
	Tarwad bark Bullock-loads.	516	...	298	...
	Do. ... ... Cart-loads.	8	...	...	...
	Do. ... ...Head-loads.	1,658	...	672	...
	Thorns ... ... Stacks.	710	...	678	...
	Do. ... ...Head-loads.	743	...	389	...
	Leaves ... ... Do.	6,794	...	2,316	...
	Do. ... Bullock-loads.	71	...	131	...
	Stones ... ... Cart-loads.	24,047	...	28,962	...
	Do. ... Bullock-loads	982	...	306	...
	Do. ... ... Cubic feet.	3,69,011	...	2,59,716	...
	Do. ... ...Head-loads.	3,686	...	1,872	...
	Do. ... Donkey-loads.	12	...	1,028	...
	Earth ... ... Cart-loads.	527	...	550	...
	Do. ... Bullock-loads.	4,598	...	2,805	...
	Do. ... ...Head-loads.	1,600	...	2,973	...
	Do. ... Donkey-loads.	3,735	...	2,498	...
	Gum ... ... Maunds.	10	} Sold by auction.		
	Honey ... ... Do.	3			
Kolába Division.	Teak beams, including pieces ...	1,26,303	...	1,16,924	...
	Do. poles	11,134	...	19,064	...
	Do. rafters	5,984	...	2,506	...
	Miscellaneous pieces	2,909	...	5,678	...
	Firewood kowl ... Khandis.	55,000	...	27,000	...
Ratnágiri Division.	Beams	1,766	...	1,115	...
	Poles	19,284	...	16,174	...
	Miscellaneous pieces	5,534	...	4,966	...
	Sotas	...	...	730	...
	Firewood ... ... Khandis.	1,076½	...	955½	...
	Hirda ... ... Do.	4½	...	2-2½	...

NORTHERN, CENTRAL, AND SOUTHERN DIVISIONS OF KÁNARA.

71. The yield of teak logs was 2,56,596 cubic feet against Rs. 3,00,971 of 1886-87. The timber operations could not be commenced in time owing to the late rains, and also to murrain among contractors' cattle. Hence the decrease.

72. The outturn of sleepers was 87,033 in 1887-88 and 89,990 in 1886-87.

73. The outturn of blackwood, junglewood and sandalwood was more than in 1886-87 by 2,896 cubic feet, 26,495 cubic feet, and 92 khandis, respectively. The increase in the first two items is due to better demand by the people and the Railway Company. The increase of sandalwood is owing to a greater number of exploitable trees having been found in the forests than in 1886-87.

74. The crop of myrobalans was not quite so good as last year.

75. Almost all the other items show an increase, the bambus in particular, of which 7,15,614 more stems were disposed of than in 1886-87. The total number extracted and sold was 41,97,415—the greatest number ever yet exported in one year.

BELGAUM.

76. The quantity of firewood collected for the Southern Marátha Railway Company was 28,93,020 cubic feet against 14,64,645 in 1886-87, and the firewood stacks collected for local consumption were 7,289 in excess of the quantity in 1886-87. Extensive firewood cuttings account for the great quantity of junglewood timber extracted, *all* firewood coupes being cut *clean*.

77. The crop of myrobolans was slightly better, and bambus, too, show an increase of 3,10,757 over the number brought in during 1886-87.

DHÁRWÁR.

78. The yield in firewood and agricultural wood shows a considerable increase, which is due to better demand.

79. The sandalwood brought in was 16 khandis more than in 1886-87. All sandalwood was sent to Hubli, on the railway, for sale, instead of to Kumta, where it used to be sent.

BIJA'PUR.

80. Almost all the items show a decrease, excepting stones. The decrease is apparently due to sales in private forests, and is to be desired on account of the reduced state of the forests which consist of nothing but the poorest scrub.

KOLA'BA.

81. The yield in teak beams and rafters was 1,16,924 and 2,506, respectively, against 1,26,303 and 5,984 in 1886-87, while the miscellaneous pieces were 2,769 more than in the previous year. Firewood shows a decrease of 28,000 kowl khandis (7,000 tons). There were large fellings in previous years, and the market has become overstocked. It was, therefore, considered advisable to curtail fellings in 1887-88.

RATNA'GIRI.

82. All the items show a decrease in the year's yield, excepting teak sotas, of which 730 more were cut than in the previous year. The forests are generally small and poor, and, for the present, protection and rest are essential. Their area is only 20 square miles.

KA'NARA SAW MILLS.

83. The Kannigeri Saw Mills worked 296 days during the year, and 297 in the previous one. Timber, amounting to 27,297 cubic feet of teak, 37 of blackwood, and 3,269 of junglewood, or 30,585 cubic feet in all, was cut up in 1887-88, and 41,752 cubic feet in 1886-87.

84. The outturn in timber was 17,760 cubic feet, while in the previous year it was 25,758 cubic feet. The outturn in sleepers, however, exceeded that of the previous year by 1,256.

85. The percentage of wastage in cutting up the wood was as follows :—

	1887-88.	1886-87.
Teak logs	45·7 per cent.	38·8 per cent.
Junglewood	58·7 „	70·5 „

86. The teak brought to the Mills during 1887-88 consisted almost entirely of logs obtained from trees girdled for sleepers, which, being of small size, caused more than usual wastage.

87. During the year considerable repairs to the Mills were carried out, all the engines having been overhauled and the old boilers repaired. One of the engines was stopped during the whole year awaiting a new boiler which could not be purchased previous to the close of the year.

88. The Divisional Officer reports that the boilers of two engines, which have been at work for over twelve years, are very old and patched in several places and have, therefore, to be worked at reduced pressure, whilst the cylinders have become oval from use and so have set up increased friction and consequent diminution of power. Mr. Haselden recommends the purchase of another new boiler, but, before going to any expense on that account, it would be well to enquire minutely into the working of the Mills. I am inclined to think that they will have very little chance of paying now that the Southern Marátha Railway Company has set up its own saw-machinery. I propose, therefore, to make a special enquiry and to submit a report on the subject later on.

89. The receipts at the Mills were Rs. 33,077 (Rs. 28,936 from clean timber and Rs. 4,141 from sleepers) against Rs. 77,619 in the previous year. The expenditure was Rs. 11,159 in 1887-88 and Rs. 13,716 in 1886-87. The large decrease is ascribable to fewer indents from the Railway Company.

CHAPTER V.

FINANCIAL RESULTS.

90. The details of the financial results and of the year's transactions are shown in forms 58 to 62.

91. The receipts and expenditure of the Southern Circle for the years 1886-87 and 1887-88 were :—

Year.	Receipts.	Charges.	Surplus or nett Revenue.
	Rs.	Rs.	Rs.
1886-87	14,33,793	6,94,614	7,39,179
1887-88	14,34,650	7,46,260	6,88,390

92. The nett revenue shows a decrease, which is due (1) to the collapse of the Kodibág timber sale ; (2) to less timber having been supplied to the Southern Marátha Railway Company ; and (3) to the curtailment of timber operations in Kolába.

93. The following shows the revenue and outstandings at the end of each two years :—

Year.	Amount realized.	Balance due to the Department at the end of the year.
	Rs.	Rs.
1886-87	14,33,793	1,71,831
1887-88	14,34,650	1,36,433

94. The following statement shows the figures of receipts and charges for 1886-87 and 1887-88 under each main head :—

Heads of Revenue and Charges.	1886-87.	1887-88.	Increase.	Decrease.
Receipts.	Rs.	Rs.	Rs.	Rs.
I.—Timber, &c., removed by Government Agency	10,17,495	10,35,438	17,943	...
II.—Timber, &c., removed by consumers or purchasers	3,93,268	3,84,299	...	8,969
III.—Confiscated, drift and waif wood ...	7,594	8,419	825	...
IV.—Revenue from forests not managed by Government	207	222	15	...
V.—Miscellaneous	15,229	6,272	...	8,957
Total Receipts ...	14,33,793	14,34,650	18,783	17,926
Expenditure.				
A.—Conservancy and Works—				
I.—Timber and other produce removed from the forests by Government agency	3,90,532	4,22,999	32,467	...
II.—Timber, &c., removed by consumers or purchasers	5,077	8,249	3,172	...
III.—Confiscated, drift and waif wood ...	225	131	...	94
V.—Rent of leased forests and payments to shareholders in forests managed by Government	16,419	10,948	...	5,471
VI.—Live-stock, stores, tools and plant...	1,575	2,144	569	...
VII.—Communications and buildings ...	6,552	5,291	...	1,261
VIII.—Demarcation, improvement and extension of forest	23,518	45,285	21,767	...
IX.—Miscellaneous	637	1,407	770	...
Total A. ...	4,44,535	4,96,454	58,745	6,826
B.—Establishment.				
I.—Salaries	1,99,124	2,01,965	2,841	...
II.—Travelling allowances	34,726	35,123	397	...
III.—Contingencies	16,229	12,718	...	3,511
Total B. ...	2,50,079	2,49,806	3,238	3,511
Total Charges—A. and B. ...	6,94,614	7,46,260	61,983	10,337

RECEIPTS.

95. The receipts very nearly balance each other for the last two years.

96. In spite of there being a falling off of Rs. 1,36,938 for timber removed by Government agency, there is an increase under I. of Rs. 17,943, which is principally due to increase in the quantity (the price remaining the same) of wood supplied to the general public and the Railway Company.

The increase under this head is as follows:—

	Rs.
Fuel	1,26,709
Sandal	11,049
Minor produce	17,280

This increase in the quantity of fuel sold is a very satisfactory feature, as the supply cannot be easily exhausted.

97. The decrease of Rs. 1,36,938 in the value of timber sold by Government agency is due to less teak having been sold to the Railway Company, and to the collapse of the Kodibág timber sale.

98. Head II. shows a decrease of Rs. 8,969, which occurs under "Timber" and is chiefly ascribable to fellings having been restricted owing to the markets being glutted with teak poles, which constitute almost the only timber produce of the Kolába forests. The value of timber extracted from them was Rs. 64,673 against Rs. 1,07,270 in 1886-87. All other sub-heads show an increase. The value of bambus sold (prices remaining the same) increased from Rs. 46,393 to Rs. 62,420, and minor produce from Rs. 21,111 to Rs. 32,220, chiefly on account of receipts for catechu, bázárbét and honey.

99. The decrease under V. is owing to collections for dress fund being no longer credited to forest revenue.

EXPENDITURE.

A.—Conservancy and Works.

100. The general increase under *A*, amounting to Rs. 51,919, is mainly owing to increased charges for departmental fuel cuttings (owing to increased demand); for the topographical survey; and for the remuneration of village officers for collecting grazing fees.

101. The decrease under V. is owing to less money having been paid to khots in Kolába, who share the revenue realized from timber.

B.—ESTABLISHMENT.

I.—Salaries.

102. The increase under *B.* is due to the promotion of officers and to a senior officer from the Northern Circle having taken the place of an Assistant Conservator.

103. The increase under *C.* is on account of the temporary establishment of Parasgad and the salaries of the four passed students of the Poona College.

III.—Contingencies.

104. The decrease of Rs. 3,511 is owing to the charges for uniforms not having been debited to this head.

105. The following shows the value, calculated at seigniorage-rates, of forest produce granted free:—

Collectorates.	1886-87.	1887-88.
	Rs. a. p.	Rs. a. p.
Kánara	17,699 0 9	18,796 12 8
Belgaum	1,372 0 4	1,151 8 7
Dhárwár	350 0 0	1,163 12 0
Kolába	2,199 0 0	1,007 0 0
Bijápur	.....	.....
Ratnágiri	265 0 0	.....
Total ...	21,885 1 1	22,119 1 3

CHAPTER VI.

GENERAL REMARKS.

CHANGES AND POSTING OF OFFICERS.

106. Mr. H. Murray, Deputy Conservator, on transfer from Dhárwár, took charge of the Divisional Office, Belgaum, on the 6th April 1887.

107. Messrs. G. M. Ryan and Stewart were transferred to the Sind Circle, and Mr. G. K. Betham, from the Northern Circle, took charge of Bijápur on the 2nd November.

108. Mr. D'Cruz, Sub-Assistant, Kárwár, held charge of Bijápur from 26th September to 2nd November, and was then transferred to Ratnágiri.

109. Mr. Talbot returned from furlough, and resumed charge of the Northern Division of Kánara on 16th May 1887 from Mr. Bell, who then took charge of the Central Division of Kánara. The latter was subsequently appointed organization officer and handed over charge of the Central Division to Mr. B. J. Haselden, Acting Assistant Conservator.

110. Mr. E. G. Oliver, a trained officer from England, was posted to the Organization Branch on the 2nd January 1888.

111. Mr. H.E. Andrewes, Assistant Conservator, Organization Branch, left on sick leave on 5th November.

112. The services of Mr. J. M. Fernandez, Sub-Assistant Conservator Belgaum, were lent to the Kolhápur State from the 8th June. Mr. N. D. Sátárávála was appointed to act for him and posted to the Organization Division under Mr. Bell.

113. Four students, sent from the Southern Circle, to go through a course of training in the Forest Class of the College of Science, Poona, passed their final examination and reported themselves for duty in November. They were brought on to the establishment as Probationary Foresters, 3rd Grade.

FOREST SETTLEMENT.

114. The settlement of the forests, excepting that of Kánara, is now virtually completed. One or two schemes for parts of Kolába and Bijápur have still to receive the sanction of Government, and a few additional "numbers" in Belgaum and Dhárwár, recently notified under section 4 of the Act, have to be settled.

115. In Kánara, the estimated areas of protected and reserved forests are 215 and 2,508 square miles, respectively. This relative proportion will presumably be considerably modified in favour of the reserved area during the next five or six years, by the end of which the Settlement Officer will, it is expected, have brought his labours to a close. Cultivation in Kánara, probably owing to the unhealthiness of the climate, does not extend above ghâts, where the best forests are situated, and the most careless observer must be struck by the number of good fields lying fallow or abandoned. The only object of maintaining protected areas in Kánara, except in the case of rab lands, appears to be to provide lands for the extension of cultivation; but there is not nearly enough indigenous labour available to cultivate even the lands now under agriculture, and large bodies of labourers have to be periodically brought up from the Konkan for that purpose. To declare large areas protected in the hope that they may ultimately be used for the extension of cultivation does not, therefore, appear to be at all necessary. The forest tenure is the same throughout, and if in each village, in which it is considered necessary to provide for the extension of cultivation, waste lands aggregating one-quarter to one-half of the area now under cultivation were excluded for that purpose and the rest "reserved," all possible requirements of cultivation would be satisfied for centuries and we should enjoy the great advantage of having all our forests settled and subject to one system of management instead of two, not to mention the great saving of expense for demarcation and for establishing and maintaining cleared

lines separating the protected from the reserved areas. When the forests come to be organized, the drawbacks of the mixed system—or, for the matter of that, of protected forests at all—would be seriously felt.

FREE GRANTS.

116. I do not think the present mode of granting wood free is as satisfactory as the old. It is, in the first place, very roundabout, and people who stand in need of immediate relief (for instance, those whose houses have been burnt) may have to wait a long time for it. Under the present rules, except in Kánara, where the old Kánara rules are still in force, the villagers usually present their petitions to the Assistant Collector, who makes an enquiry into the case through the Mámlatdár and forwards the particulars to the Collector, who sends them to the Conservator. The Conservator forwards the papers to the Commissioner, who issues an order for the wood to the Collector, who sends it to his Assistant. The order then goes to the Divisional Officer, and he sends it to the Range Officer for execution.

117. If the Conservator is not satisfied with the recommendations of the Collector, a further delay, pending reference to the Divisional Officer, ensues. As a rule, the opinion of the Collector regarding the necessity of a free-grant has been accepted without further enquiry on the spot; but cases have been brought to my notice in which men who were not proper objects of charity have obtained free grants, and it will be necessary in future to refer nearly all cases to the Divisional Officer for special enquiry. This result is natural enough as the actual inquiry into the circumstances of minor cases by the Revenue Department is usually made by the Kulkarnis and Pátels who have no interest in checking the misappropriation of forest produce. The forest officials *are* interested in preventing such waste, and should prove a useful check on the village authorities.

118. The procedure described above seems unnecessarily tedious for nine-tenths of the free grants which do not, in all probability, exceed 60 cubic feet of the nominal value of Rs. 15 each, and such small quantities might be disposed of by the Divisional Forest Officer as in former years, or by any superior Revenue officer in consultation with the Divisional Officer, without reference to higher authority.

119. The result would be great convenience to everybody concerned. Half the cases could be enquired into personally on the spot by the Divisional Officer. Petitioners would bring their petitions to his camp in the travelling season, and would never have far to go, and Divisional Officer's orders to the Ranger could be issued without delay.

120. For all free grants of wood exceeding Rs. 15 in nominal value the sanction of Government might be obtained.

121. In Kánara, the old rules are still in force, and a great number of people can go into the jungle and help themselves to whatever they may require for personal use. The consequence is that timber trees of large size are often cut to supply wants which could be satisfied by small trees, and three-quarters of the trees cut by such privileged persons are undoubtedly left to rot in the jungles. I think that no timber, even in Kánara, should be cut except on permit; a great deal of damage is certainly done to the forests by the abuse of the privilege, and I see no reason why it should not be stopped. If it is not harsh to forbid a villager in the Belgaum District to cut timber without permission, it could cause no great hardship if a neighbour on the other side of his village-boundary is subjected to the same restriction.

RÁB.

122. In the Sirsi and Siddápur Tálukas of Kánara "garden" proprietors are beginning to demand fresh assignments of ráb lands. At the original settlement 5—8 acres of forest land were allotted *free* to each acre of "garden" land, and probably not less than half the forest-clad area of Siddápur and Sirsi is used for ráb. The "garden" country has become very denuded in consequence. Every year the trees on the ráb lands are lopped from head to foot, and all the ráb forests, comprising the greater part of the forests of Siddápur, and

Sirsi, are opening out. The whole of the forest, so operated on, is without doubt doomed. This cannot now be helped, but I would be very sorry to see fresh forest land given out for similar treatment. Instead of husbanding their resources, the proprietors of garden land would regard fresh sources of ráb as a means of extending their gardens, which are naturally very profitable to the handful of owners, if not to the people at large.

DALHI.

123. In the Kolába District people are already beginning to demand more land for *dalhi*, a species of kumri cultivation, which often differs from ordinary kumri only in name. I fear we are no nearer a solution of this difficult question than we were before Mr Sinclair's recent settlement of it, and that either all hope of preserving the ghát forests of Kolába from destruction, or the extension of dalhi, must be abandoned. The papers relating to this question are now before Government.

CLOSE SEASON FOR GAME IN RESERVED AND PROTECTED FORESTS UNDER SECTIONS 25 AND 31 OF THE FOREST ACT.

124. There can be no doubt that wild animals of all kinds are rapidly diminishing in numbers and that unless a close season is instituted the time when they will all be exterminated is not far distant. Even in Kánara, deer are becoming very scarce. Colonel Peyton, in his interesting account of the wild animals of Kánara, published in the Gazetteer (Vol. XV, part I, p. 81 *et. seq.*) refers to the rapid disappearance of sámbhar and chital. "Ten or fifteen years ago," he writes in 1882, "the spotted deer was abundant throughout the valleys of the Kálánadi, Bedtihalla, Gangawali and Tadri, as well as all along the east of the district, and at most places two or three stags could be shot in a morning stalk. At Dándéli in 1867, from a herd of not less than 150 to 200, three splendid stags were picked out and shot in a few moments. Now about the same place, the sportsman may think he has had a lucky morning if he sees a small herd and gets one stag. Spotted deer were at one time numerous in the Dhárwár forests along the Kánara frontier, but, as in Kánara, they are now scarce. The same may be said of the Belgaum chital. The pot-hunting shikaries with licensed and unlicensed guns, and some of the Government armed servants at posts throughout the district are responsible for the disappearance of the chital." Colonel Peyton might have added to the list of offenders the not inconsiderable body of Englishmen who shoot at every animal, male or female, they see.

125. I can confirm for 1888 what Colonel Peyton wrote in 1882. During a stay of several days in the jungles of Dándéli this year I saw no stags and only two doe-chital although I was out in the most likely spots for game for many hours every day. Everywhere in Kánara, big game is getting very scarce, and if Government now consent to fix a close season in reserved and protected forests during the breeding months of deer and bison, it will not be a day too soon if the extinction of these useful animals is to be averted.

ITINERARY.

126. On the 1st April my camp was at Tátwál in the Central Division of Kánara, and was removed on the 3rd to Bomanhalli, where I met the Divisional Officer, Northern Division.

127. From Bomanhalli I went to Kulgi, inspecting the timber fellings going on in the surrounding jungles; from Kulgi I proceeded to Dándéli; thence to Haliyál and Nágargáli in the Belgaum Division, which was reached on the 28th. At Nágargáli, where I met the Divisional Officer, I saw the railway fuel cuttings, which were being carried out on a large scale. On the 7th May I proceeded to Khánápur and from there to Jámboti, Ambgaon and Belgaum, which was reached on the 7th May.

128. On the 20th November I reached Malkápur in the Kolhápur District, and marched thence to Aurole in the Ratnágiri District, *viâ* the Amba pass, Ságápe and Sangameshvar.

139. From Aurole I took a route parallel to the sea *viâ* Chiplún to Khed (where I met the Divisional Officer) and Jaitápur, which was reached on the 28th November. From Jaitápur I inspected the forest group lying on the spurs of the ghâts, and reported on it to Government, as requested in their No. 6568 of 28th September 1887. I then proceeded to Dápoli, where I inspected the cuttings going on in the Band reserves—a small coppice forest, chiefly teak, and also the local casuarina plantations.

130. I then took steamer to Dásgaon in the Kolába District, and marched *viâ* Indápur and Nágothna to Pen, which was reached on the 10th of December, inspecting the jungles on the way. At Nágothná I met the Divisional Officer. From Pen I went to Karjat *viâ* Kámpoli and Shiroli after inspecting the cuttings below Khandála.

131. At Karjat I took train for Bágalkot, *viâ* Bijápur, arriving there on the 21st December. At Bijápur I met the Divisional Officer. On the 23rd Bádámi was reached, and the plantation and the surrounding hills inspected. From Bádámi I went to Dambal, inspected the Kapatgudd range, and took train on the 12th January for Dhárwár, where I met the Divisional Officer. On the 25th I went to Belgaum to meet His Excellency the Governor. On the 5th February I reached Dévikop in the Dhárwár District, and proceeded *viâ* Kolikeri to Yellápur, where I met the Divisional Officer. On the 14th February I started down the Arbáil Ghát to Rámanguli, where I saw the contract timber cuttings. From Rámanguli I proceeded *viâ* Agsur to Belikeri, and inspected the firewood cuttings and the depôt of Hattikeri. At Kárwár, which was reached on the 20th February, I inspected the Kodibág depôt. I then went to Kadra and visited the timber and firewood cuttings in the neighbourhood. Gund was reached on the 8th March and Potoli on the 17th, where I met the Divisional Officer and Messrs. Bell and Oliver, Assistant Conservators, engaged in the enumeration of the surrounding forests. On the 29th Haliyál was reached.

HEALTH, &c., OF OFFICERS AND MEN.

132. During the past year there was more sickness than usual amongst both officers and men. During the whole of the working season Mr. R. Ryan suffered from fever.

133. Messrs. Bell and Oliver also suffered much from fever, which was aggravated by dysentery, and their Assistants were constantly absent from work from the same cause. As already observed, this sickness in a great measure accounts for the poor results of their season's work, and I expect that, with better health and the experience they have now gained, next season will bring forth much better results.

134. I have much pleasure in acknowledging the satisfactory work done by the other officers of all branches of the department under me, with the exception of some minor foresters and guards, who, as a class, are not reliable. I hope that the proposed reorganization of the subordinate staff may effect an improvement in this latter portion of the *personnel*.

J. L. L. MacGREGOR,
Conservator of Forests, Southern Circle.

Conservator's Office, Southern Circle:
Dated Belgaum, 19th October 1888.

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LIST OF STATEMENTS ACCOMPANYING THE FOREST ADMINISTRATION REPORT OF THE CONSERVATOR OF FORESTS, SOUTHERN CIRCLE, FOR 1887-88.

A, B, & C.	Forms referred to in paragraph 26 of the report.
D.	Statement showing the progress of the Forest Demarcation and Settlement work up to 1st April 1888.
Form No. 49	Area of Reserved Forests, 1887-88.
„ 49A.	Area of Protected Forests, 1887-88.
„ 50	Prosecutions for breaches of Forest Rules during 1887-88.
„ 51	Area of Forest tracts protected from fire during the dry season of 1888.
„ 52	Area of Plantations, 1887-88.
„ 53	Trees felled by Government agency during the year 1887-88 (selection fellings).
„ 54	Outturn of timber and firewood during the year 1887-88.
„ 55	Outturn of minor produce, 1887-88.
„ 56	Account of timber and other produce cut or collected by Government agency and brought to sale depôts or sold locally during the year 1887-88.
„ 57	Abstract showing the value of timber and other produce at sale depôts for the year 1887-88.
„ 57A.	Abstract showing the value of dead stock for the year 1887-88.
„ 58	Summary of revenue and expenditure of the different divisions during the year 1887-88.
„ 59	Account current for the year 1887-88.
„ 60	Revenue received and outstandings on account of revenue during 1887-88.
„ 61	Outstandings and liabilities on account of contractors and disbursers for 1887-88.
„ 62	Financial Results of the year 1887-88.

J. L. L. MacGREGOR,
Conservator of Forests, Southern Circle.

A.

FOREST OF KUMBA'RVA'DA.

COMPARTMENT 15, AREA 150 ACRES.

ESTIMATE OF DIAMETER OF TEST-TREES.

Test-Plot No. 1, Area 3 acres.

Species.	Number of Trees.	Diameter.	Basal Area.	Major Class.	Number of Trees in Major Class	Total Basal Area of Major Class	Average Basal Area.	Corresponding average Diameter.
							Of one test-tree.	
		Inches.	Sq. feet.					
Matti	30	6	5·89					
	80	7	21·38					
	70	8	27·93	6—10	324	126·39	0·393	8·5
	71	9	31·37					
	73	10	39·82					
Do.	91	11	61·06					
	105	12	82·47					
	69	13	63·06	11—15	420	385·42	·917	13·
	72	14	76·97					
	83	15	101·86					
Do.	74	16	103·32					
	67	17	105·61					
	68	18	120·17	16—20	338	597·99	1·77	18·
	59	19	116·17					
	70	20	152·72					
Do.	70	21	168·37					
	52	22	137·27					
	55	23	158·69	21—25	253	712·45	2·81	22·7
	41	24	128·81					
	35	25	119·31					
Teak	41	6	&c.	&c.				
	67	7						
	89	8						
	97	9						
	114	10						
&c.,	&c., for remaining classes and species.							

Conservator's Office, Southern Circle :
Dated Belgaum, 19th October 1888.

J. L. L. MACGREGOR,
Conservator of Foersts, Southern Circle.

B.

FOREST OF KUMBA'RVA'DA.

COMPARTMENT No. 56, AREA 159 ACRES.

ESTIMATE OF CONTENTS AND INCREMENT.

Test-Plot I, Area 7·5 acres (taken 12-3-88).

Species and number of Test-tree.	Age.	Length to outermost Branches.	Diameter at 4′ with bark.	Number of Test-logs	Diameter of Logs of Timber without Bark.			Length of Logs.	Diameter Increment of Test Logs.		Mean Diameter Growth.	Cubic Contents of Test Logs.		Cubic Increment.				Total Contents of Timber.	Firewood Cubic Contents.	Total Cubic Contents of Tree.	Total number of Trees of the Species in the Plot.	Reduced Values.			Cubic Contents of the Class.	
					At top.	At centre.	At bottom.		For ten years.	For one year.		Actual.	Ten years ago.	Last ten years.	Hence one year.	Percent. per annum.	Average percent.					Timber.	Firewood.	Total.	Timber.	Firewood.
		Feet.	In.		In.	In.	In.	Feet.	In.	In.		Cub. ft.	Cub. ft.					Feet.	Feet.	Feet.						
									Class I (6 to 10″). *True average tree* 8½″ *Actual taken* 8½″																
Matti	40	41	8·25	1	5 7/12	7	9½	15·5	1·53	·153	·153	4·14	2·5	1·86	·186	4·49	4·49	4·14	2·5	6·64	324	3·89	2·35	6·24	1,260	761
									Class II (11 to 15″). *True average tree* 13·0″. *Actual taken* 13·25.″																
Do.	36	44	12·25	1	11	11¾	12¾	11	3·33	·33	·33	9·00	4·73	4·27	·427	4·7	4·7	9·00	12·5	21·5	420	8·06	12·02	20·08	3,385	548
									Class III (16 to 20″). *True average tree* 18·0″. *Actual taken* 19·25″.																
Do.	100	43	19½	1	20	14·5	12·5	19	2·22	·222	·22	28·79	21·94	6·85	·685	2·38	2·61	46·43	15·00	61·43	338	40·6	13·11	53·71	13,723	4,431
				2	11·7	10·0	9·0	18	2·22	·222	·22	17·64	12·6	5·04	·504	2·85										
									Class IV (21 to 25″). *True average tree* 22·7″. *Actual taken* 24·75″.																
Do.	110	58	24·75	1	17·5	19·5	23	12	2·0	·2	..	27·30	22·26	5·04	·504	1·84	2·09	43·68	21·00	64·68	253	36·76	17·66	54·42	9,290	4,468
				2	14·0	17·5	17·5	12	2·0	·2	·2	16·38	12·54	3·84	·384	2·34										
									Class I (6 to 10″). *True average tree* 7¾″. *Actual taken* 7½″.																
Kindali									&c.					&c.					&c.						

Conservator's Office, Southern Circle:
Dated Belgaum, 19th October 1888.

J. L. L. MACGREGOR,
Conservator of Forests, Southern Circle.

C.

FOREST OF KUMBA'RVA'DA.

COMPARTMENT No. 5, AREA 150 ACRES.

Abstract showing contents and Increment of whole Compartment.

Species.	Major Class.	Test-plot Number and Area.	Number of Trees.	Mean Diameter.	Mean Age.	Cubic Contents.		Increment per annum.		Total of Major Class.					Major Class.	Area in Acres.		Total Cubic Contents of Compartment.		Average Age.	Increment of Compartment for one year.	
						Timber.	Firewood.	Diameter.	Cubic per cent.	Number of Trees.	Cubic Contents. Feet.		Average Increment per annum.			Total of Test-plots.	Total of Compartment.	Timber.	Firewood.		Timber.	Firewood.
											Timber.	Firewood.	Diameter.	Cubic per cent.								
	Inches.			Inches.		Feet.	Feet.	Inches.	Feet.													
Matti	11—15	I 3 ac.	153	12·5	62	3,062	1,537	·25	4·02	345	6,533	2,972	·23	3·96	11—15	7·	150	140,000	63,690	66	5,460	2,484
Do.	11—15	II 4 ac.	192	13·1	69	3,471	1,435	·2	3·9													
Do.	16—20		&c.					&c.							16—20		&c.					
Do.	21—25		&c.					&c.							21—25		&c.					
&c....		&c.			...																	
Teak	11—15	...	...	...	...	...	...	...	...	...	...	...	...	...	11—15	...	...	...	...	...	...	...
Do.	16—20	...	...	...	...	...	...	...	...	...	...	...	...	...	16—20	...	...	...	...	...	...	...
Do.	21—25	...	...	...	...	...	...	...	...	...	...	...	...	...	21—25	...	...	...	...	...	...	...
Do.	26—30	...	...	...	...	...	...	...	...	...	...	...	...	...	26—30	...	...	...	...	...	...	...
Kindali	11—15	...	...	...	...	...	...	...	...	...	...	...	...	...	11—15	...	...	...	...	...	...	...
		&c.		&c. for remaining species.											&c.							

Conservator's Office, Southern Circle:
Dated Belgaum, 19th October 1888.

J. L. L. MACGRAGOR,
Conservator of Forests, Southern Circle.

D.

Statement showing the progress of Forest Demarcation and Settlement work up to the 1st April 1888.

Name of Collectorate.	Class of Forests.	At the commencement of the year. Areas under Section 34 in which private rights have not been enquired into, settled and recorded.		Areas settled during the year. Under Chapter II of the Forest Act.		Areas settled during the year. Under Chapter IV of the Act.		Area of the Reserved Forests alienated under Section 26.		Area of the Protected Forests disforested under Government orders.		At the end of the year. Areas under Section 34 in which private rights have not been enquired into, settled and recorded.		Remarks.
		Square Miles.	Acres.	Square Miles.	Acres.	Square Miles.	Acres.	Square Miles.	Acres.	Square Miles.	Acres.	Square Miles.	Acres.	
1. Kánara	Reserved ...	214	439	...	...	...	...	...	..	...	...	214	439	
	Protected ...	2,508	321	...	...	...	...	...	...	...	...	2,508	321	
2. Belgaum	Reserved ...	360	221	...	...	...	...	...	$\frac{2}{5}$	...	...	360	$220\frac{3}{5}$	
3. Bijápur	Reserved ...	155	115	...	...	...	...	...	$39\frac{7}{40}$	...	...	155	$75\frac{33}{40}$	
	Protected ...	89	409	...	...	...	...	...	...	...	...	89	409	
4. Kolába	Reserved ...	146	$99\frac{1}{4}$	...	...	...	...	5	$479\frac{38}{40}$	...	...	140	$259\frac{3}{10}$	
	Protected ...	37	$90\frac{19}{40}$	...	...	...	...	...	...	...	...	37	$90\frac{19}{40}$	
5. Ratnágiri	Reserved ...	20	13	...	...	...	...	...	$4\frac{7}{40}$	...	...	20	$8\frac{3}{10}$	
Total ...	Reserved ...	896	$247\frac{1}{4}$	...	...	...	...	5	$524\frac{9}{40}$	...	...	890	$363\frac{1}{40}$	
	Protected ...	2,635	$180\frac{19}{40}$	...	...	...	...	...	...	...	...	2,635	$180\frac{19}{40}$	

Conservator's Office, Southern Circle:
Dated Belgaum, 19th October 1888.

J L. L. MacGREGOR,
Conservator of Forests, Southern Circle.

FORM No. 49.

FOREST DEPARTMENT, BOMBAY, SOUTHERN CIRCLE.

Area of Reserved Forests, 1887-88.

Division or Range.	Civil District or Territory.	Name of Forest.	Area on 1st April 1887.		Added during the year.	Excluded or transferred to other Heads.	Area on 31st March 1888.		Number and Date of Notification of addition or transfer.	Remarks.
			Acres.	Equivalent in Square Miles.	Acres.	Acres.	Acres.	Equivalent in Square Miles.		
1. Northern Division of Kánara .	Kánara ...	Haliyál and Kárwár ...	2,98,437	466	...	...	2,98,437	466		
2. Central Division of Kánara ...	Do. ...	Mundgod and Ankola ...	1,17,359	184	...	...	1,11,359	184		
3. Southern Division of Kánara .	Do. ...	Sirsi	21,771	34	...	...	21,771	34		
4. Belgaum ...	Belgaum ...	Khánápur, Belgaum, Sampgaon, Gokák, Chikodi and Athni.	3,14,962	492	*33 9/40	†14 29/40	3,14,980 1/2	492	*No. 539 of 1st August 1887. †No. 2419 of 22nd April 1887.	
5. Dhárwár ...	Dhárwár ...	Dhárwár, Kalghatgi, Hángal, Bankápur, Kod, Gadag, Ron, Nargund, Hubli and Ránebennur.	1,09,865	172	...	14 37/40	1,09,850 3/40	172	No. 8382 of 7th December 1887.	
6. Bijápur ...	Bijápur ...	Bádámi, Hungund, Bijápur, Bágevádi, Muddebihál and Indi.	99,315	155	...	39 7/40	99,275 33/40	155	No. 3507 of 7th June 1887.	
7. Kolába ...	Kolába ...	Alíbág, Panvel, Pen, Roha, Mahád and Mángaon.	1,91,831 11/40	300	...	3,679 19/20	1,88,151 13/40	294	No. 2092 of 4th April 1887, No. 2093 of 4th April 1887 and No. 2425 of 23rd April 1887.	
8. Ratnágiri ...	Ratnágiri ...	Dápoli, Khed, Rájápur, Málvan, Chiplún and Sangameshvar.	12,813	20	...	4 7/10	12,808 3/10	20	No. 7553 of 7th November 1887.	
		Total ...	11,66,353 11/40	1,823	33 9/40	3,753 1/8	11,62,633	1,817		

Conservator's Office, Southern Circle : J. L. L. MACGREGOR.

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FORM No. 49 A.

Forest Department, Bombay, Southern Circle.

Area of Protected Forests, 1887-88.

Division or Range.	Civil District or Territory.	Name of Forest.	Area on 1st April 1887.		Added during the year.	Excluded or transferred to other Heads.	Area on 31st March 1888.		Number and Date of Notification of addition or transfer.	Remarks.
			Acres.	Equivalent in Square Miles.	Acres.	Acres.	Acres.	Equivalent in Square Miles.		
Northern Division of Kánara.	Kánara ...	Supa...	4,62,944	723	...	...	4,62,944	723		
Central Division of Kánara.	Do. ...	Yellápur, Mundgod, Kumta and Ankola.	5,68,209	888	...	...	5,68,209	888		
Southern Division of Kánara.	Do. ...	Sirsi, Siddápur, Honávar and Bhatkal.	8,02,438	1,254	...	...	8,02,438	1,254		
Belgaum	Belgaum ...	Belgaum, Chikodi, Gokák and Parasgad.	1,26,303 9/40	197	*32 3/4	†212 9/40	1,26,123 3/4	197	*No. 2693 of 2nd May 1887. †No. 2730 of 3rd May 1887.	
Dhárwár	Dhárwár ...	Dhárwár, Kalghatgi, Bankápur, Kod, Hángal, Gadag, Ránebennur, Karajgi and Hubli.	1,66,661	260	...	2	1,66,659	260	No. 1415 of 29th February 1888.	
Bijápur	Bijápur ...	Bágalkot, Hungund, Bijápur, Bágevádi and Indi.	364	1	...	...	364	1		
Kolába...	Kolába ...	Alíbág, Panvel, Pen, Roha, Mahád, Mángaon and Nágothna.	56,940 31/40	89	...	...	56,940 31/40	89		
		Total ...	21,83,860	3,412	32 3/4	214 9/40	21,83,678 31/40	3,412		

Conservator's Office, Southern Circle:
Dated Belgaum, 19th October 1888.

J. L. L. MacGREGOR,
Conservator of Forests, Southern Circle.

ANNUAL FORM No. 50.

Forest Department, Bombay, Southern Circle.

Prosecutions for breaches of Forest Rules during 1887-88.

Forest Division and Civil District.	Cases pending from 1886-87.	New Cases of the year.					Total Cases.	Disposed of during the year.						Cases pending at close of year.
		Injury to Forest by Fire.	Unauthorized felling or appropriation of Wood and minor Forest Produce.	Grazing without Permission or in Tracts in which Grazing is prohibited.	Other Offences.	Total new Cases of the year.		Convictions.		Acquittals.		Total.		
								Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	
Kánara District.														
Northern Division of Kánara ...	1	...	17	...	...	17	18	13	15	5	5	18	20	...
Central Division of do. ...	...	...	9	...	1	10	10	9	9	1	2	10	11	...
Southern Division of do. ...	1	1	12	...	3	16	17	11	15	6	8	17	23	...
Belgaum District.														
Belgaum	*1	...	10	...	2	12	13	7	28	6	21	13	49	...
Dhárwár District.														
Dhárwár	...	...	8	...	1	9	9	7	11	2	4	9	15	...
Bijápur District.														
Bijápur	...	1	4	...	...	5	5	1	4	3	3	4	7	1
Kolába District.														
Kolába	...	...	21	6	8	35	35	22	73	8	58	30	131	5
Ratnágiri District.														
Ratnágiri	1	...	3	3	...	6	7	5	6	2	2	7	8	...
Total ...	4	2	84	9	15	110	114	75	161	33	103	108	264	6

* Four cases were shown last year under this column, three of which not being forest offences have been struck off.

Conservator's Office, Southern Circle:
Dated Belgaum, 19th October 1888.

J. L. L. MacGREGOR,
Conservator of Forests, Southern Circle.

FOREST DEPARTMENT, BOMBAY, SOUTHERN CIRCLE.

Area of Forest Tracts protected from Fire during the Dry Season, 1888, to accompany Report for 1887-88.

Division.	Forest Tracts.	Years in which protection commenced.	Area actually protected up to 15th June 1887.	During the Dry Season of 1888.			Cost during the Season.	Remarks.
				Area attempted to be protected.	Failures.	Actually protected.		
			Acres.	Acres.	Acres.	Acres.	Rs. a. p.	
1. Northern Division of Kánara.	Bomanhally, Kulgi and Bamney	1887-88	.....	65,067	2,690	62,377	167 0 0	
	Barchi, Singatgeri, Bomanhally, Kadra, Mardi and Sulgeri plantations ...	.....	.....	1,081	.....	1,081	568 15 6	
			.....	66,148	2,690	63,458	735 15 6	
2 Southern Division of Kánara.	Bhedsgaon, Togrally ...	1887-88	.....	1,157 1,880	....	1,157 1,880	23 0 0	
			.....	3,037	.....	3,037	23 0 0	
3. Belgaum ...	Nandi and Sundi	1886-87	1,075	1,075	.....	1,075	26 15 0	
	Katgali	1887-88						
	Manturgi	1884-85	1,991	1,991	.....	1,991	121 1 0	
	Savargali, Nagargali and Potoli	1886-87						
	Satnali	1887-88						
	Biranholi	1883-84	2,985	2,985	.....	2,985	39 6 0	
	Mawnur and Rustampur...	1885-86						
	Daddi	1886-87						
	Konur, Degaon, Tawag and Gokák	1887-88	6,116	6,116	.....	6,116	117 6 0	In last year's statement (in column "actually protected)" 1,566 acres were wrongly shown by the Divisional Officer.
	Total ...		12,167	12,167	.....	12,167	304 12 0	
	Grand total ...		12,167	81,352	2,690	78,662	1,063 11 6	

Conservator's Office, Southern Circle:
Dated Belgaum, 19th October 1888.

J. L. L. MACGREGOR,
Conservator of Forests, Southern Circle.

FORM No. 52.

Forest Department, Bombay, Southern Circle.

Area of Plantations, 1887-88.

Division.	Name of Plantation.	Area in Acres. On 1st April 1887.	Added during the year.	Excluded during the year.	Area on 31st March 1888.	Receipts. Of the year Rs. a. p.	Charges. Of the year Rs. a. p.	Remarks.
	Regular Plantations.							
Northern Division of Kánara.	Kadra	357	...	...	357	432 4 6	463 12 0	
	Mardi	110	...	...	110		125 10 6	
	Sulgeri	110	...	...	110	.....	317 6 0	
	Kárwár	118	...	...	118	292 13 10	26 5 3	
	Bingi	20	...	...	20	64 3 0	8 11 3	
	Argi	...	9	...	9	.....	362 7 5	
	Barchi	221	...	...	221	.....	45 3 6	
	Singatgeri	83	...	...	83	.....	81 5 0	
	Bomanhalli	200	...	...	200	.....	.....	
Central Division of Kánara.	Devarbail teak plantation	15	...	...	15	15 8 0	.....	
	Arbail do.	5	...	...	5	.....	.....	
Southern Division of Kánara.	Kasarcode	298	...	...	298	.....	780 3 5	
Belgaum	*Kalasgade	13	...	...	13	0 9 0	13 11 0	*These two plantations were wrongly entered under "Cultural operations" in last year's report.
	Lingunmut	16	...	...	16	.....	.....	
	*Deshnur	150	...	...	150	.....	.....	
Bijápur	Anantápur	87	3	...	90	.....	132 6 0	
	Mamdápur	164	4	...	168	.....	312 12 2	
	Sidpur	...	12	...	12	.....	53 4 0	
Kolába	Warsoli	10	...	...	10	.....	.....	
	Ramdharni	50	...	...	50	.....	.....	
	Rájwádi	12	...	...	12	.....	.....	
	Total Regular Plantations...	2,039	28	...	2,067	805 6 4	2,723 1 6	
	Cultural Operations.							
Central Division of Kánara.	Sahasrawali	12	...	...	12	.....	.....	
	Yellápur	26	...	...	26	.....	106 11 6	
	Harwáda	1	...	...	1	7 2 0	.....	
Southern Division of Kánara.	Banawasi	27	...	...	27	.....	.....	
	Anegundi	7	...	...	7	.....	.....	
	Kalkatti	2	...	...	2	.....	.....	
	Alalli			Not known.		.....	.....	
Belgaum	3 villages kumri in Belgaum.	21	...	...	21	.....	2 8 0	Watering &c.,
	17 villages kumri in Khánápur.	90	...	...	90	.....	.....	
	Nagargali	...	¼	...	¼	.....	15 6 6	On account of cart a nursery.
Dhárwár	Holtikota	34	...	...	34	.....	1 11 0	
	Salkinkop	152	...	...	152	55 0 0	3 9 0	
	Gongdikop	28	...	...	28	.....	.....	
	Saptápur	35	...	...	35	28 8 0	2 3 0	
	Kelgeri	21	...	...	21	75 0 0	2 10 0	
	Kalghatgi	399	...	...	399	.....	22 4 0	
	Ichanhalli	86	...	...	86	.....	23 11 0	
	Devikop	29	...	...	29	.....	37 11 0	
Bijapur	Mamdápur	190	4	...	194	.....	76 9 5	
	Kaládgi	195	...	...	195	.....	9 15 0	
	Jacknur	9	...	...	9	.....	15 0 0	
Kolába	Alíbág	5	...	...	5	.....	1 4 0	
	Sáttád	81	...	...	81	.....	47 12 6	
Panwel	Dápoli	114	63	67	110	.....	.....	
	Khed	47	...	30	17	.....	.....	
	Chiplún	71	32	37	66	.....	.....	
	Sangameshvar	98	24	...	122	.....	.....	
	Málvan	29	9	17	21	.....	.....	
	Total Cultural Operations...	1,809	132¼	151	1,790¼	165 10 0	368 13 11	
	Grand Total ...	3,848	160¼	151	3,857¼	971 0 4	3,091 15 5	

Conservator's Office, Southern Circle:
Dated Belgaum, 19th October 1888.

J. L. L. MacGREGOR,
Conservator of Forests, Southern Circle.

FORM No. 53.

Forest Department, Bombay, Southern Circle.

Trees felled by Government Agency during the year 1887-88.
(Selection Fellings.)

Division.	Trees felled.		Remarks.
	Description.	Number.	
Northern Division of Kánara.	Teakwood	3,408	
	Blackwood	90	
	Junglewood	751	
	Total ...	4,249	
Central Division of Kánara.	Teakwood	2,729	
	Junglewood	89	
	Total ...	2,818	
Southern Division of Kánara.	Sandalwood	461	
Dhárwár	Teakwood	11,470	
	Junglewood	893	
	Sandalwood	656	
	Total ...	13,019	
	Grand Total ...	20,547	

ABSTRACT OF THE CIRLE.

	Teakwood	17,607
	Blackwood	90
	Junglewood	1,733
	Sandalwood	1,117
	Total ..	20,547

Conservator's Office, Southern Circle:
Dated Belgaum, 19th October 1888.

J. L. L. MacGREGOR,
Conservator of Forests, Southern Circle.

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FORM No. 54.

FOREST DEPARTMENT, BOMBAY, SOUTHERN CIRCLE.

Outturn of Timber and Firewood during the year 1887-88.

Division.	Description of Materials.	Outturn in Cubic Feet.							Remarks.
		Selection Fellings.	Clearances.	Thinnings.	Total.	Removed by Government Agency.	Purchasers.	Free Grants.	Right-holders.	
Northern Division of Kánara.	Teakwood	1,62,672	...	...	1,62,672	1,62,672	...	...	...	
	Do. round pieces ...	11,771	...	...	11,771	11,771	...	...	...	
	Do. poles	...	7,212	1,881	9,093	9,093	...	...	...	
	Do. pieces	251	7	...	258	258	...	...	...	
	Blackwood	4,317	...	...	4,317	4,317	...	...	...	
	Do. poles	25	...	...	25	25	...	...	...	
	Do. pieces	1	6	...	7	7	...	...	...	
	Junglewood	1,44,230	...	...	1,44,230	37,638	71,731	34,861	...	
	Do. poles	3,656	96	...	3,752	96	3,656	...	...	
	Do. pieces	1	62	...	63	63	...	...	...	
	Firewood	...	10,62,965	...	10,62,965	4,17,724	6,45,241	...	...	
	Do. ... Cart-loads.	...	2,094	...	2,094	26	2,068	...	...	
	Do. ... Head-loads.	...	34,538	...	34,538	...	34,538	...	...	
	Do. ... Stacks.	...	...	310	310	310	...	...	...	
	Do. ... ... Tons.	...	8,765	...	8,765	...	8,765	...	...	
	Charcoal ... ...Sacks.	...	270	...	270	...	270	...	...	
	Do. ... Mudas.	...	460	...	460	460	...	...	...	
	Kárvi .. ... Head-loads.	...	587	...	587	...	587	...	...	
	Casuarina poles	...	...	1,800	1,800	1,800	...	...	...	
	Total ...	3,26,924	11,17,062	3,991	14,47,977	6,46,260	7,66,856	34,861	...	
Central Division of Kánara.	Teakwood	62,888	17,229	...	80,117	76,438	3,679	...	...	
	Blackwood	...	3,483	...	3,483	230	3,253	...	...	
	Junglewood	7,630	80,389	...	88,019	7,870	61,236	18,913	...	
	Teak poles ... ... No.	...	...	4,416	4,416	4,416	...	...	...	
	Blackwood poles ... ,,	...	...	2	2	2	...	...	...	
	Junglewood do. ... ,,	...	...	2,074	2,074	615	1,359	100	...	
	Teak tree ... ... ,,	...	1	...	1	...	1	...	...	
	Blackwood plant ... ,,	...	...	1	1	...	1	...	...	
	Sandalwood do. ... ,,	...	...	1	1	1	...	...	...	
	Mango tree ... ... ,,	...	2	...	2	...	2	...	...	
	Teak round pieces for sleepers ... ... ,,	9,619	22,691	...	32,310	32,310	...	...	...	
	Adzed teak sleepers ... ,,	...	...	2,009	2,009	2,009	...	...	...	
	Jeruttiwood pieces	...	...	3,384	3,384	3,384	...	...	...	
	Gayliwood do.	...	...	100	100	100	...	...	...	
	Props for hedges ... No.	...	...	214	214	...	214	...	...	
	Brakes for traffic carts. ,,	...	...	1	1	1	...	...		
	Firewood ... Cart-loads.	...	...	1,496	1,496	31	1,402	63	...	
	Do. ... Head-loads.	...	...	88,918	88,918	83	88,485	350	...	
	Firewood ... Stacks.	...	...	635	635	635	...	...	...	
	Do. ,, ... Tons.	...	11,050	...	11,050	...	11,050	...	...	
	Charcoal ... Maunds.	...	672	...	672	...	672	...	...	
	Sandalwood ... Khandis.	...	20	...	20	20	...	...	...	
	Total ...	80,137	1,35,537	1,03,251	3,18,925	1,28,145	1,71,354	19,426	...	
Southern Division of Kánara.	Sandalwood ... Khandis.	91	...	...	91	91	...	...	...	
	Teakwood	2,434	...	...	2,434	1,265	369	800	...	
	Blackwood	162	...	...	162	92	70	...	...	
	Junglewood	46,058	1,20,605	...	1,66,663	15,733	1,20,605	30,325	...	
	Do. poles ... No.	...	...	546	546	...	...	546	...	
	Teak pieces for sleepers ...	...	2,083	...	2,083	2,083	...	...	...	
	Firewood ... Cart-loads.	...	...	4,374	4,374	...	4,374	...	...	
	Do. ... Head-loads.	...	...	70,300	70,300	...	70,300	...	...	
	Do. ... Tons.	...	2,000	...	2,000	...	2,000	...	...	
	Do. ... Maunds.	...	...	3,397	3,397	...	3,397	...	...	
	Charcoal ,,	...	108	...	108	...	108	...	...	
	Total ...	48,745	1,24,796	78,617	2,52,158	19,264	2,01,223	31,671	...	
Belgaum.	Teak trees ... ... No.	3,388	...	...	3,388	3,388	...	...	...	
	Do. poles from branches ... ,,	2,596	...	...	2,596	2,596	...	...	...	
	Do. logs ... ,,	...	...	42	42	...	42	...	...	
	Do. poles ... ,,	...	609	276	885	609	276	...	...	
	Junglewood do. ,,	...	15,872	4,699	20,571	15,872	1,974	2,725	...	
	Do. logs ... ,,	...	577	...	577	577	...	...	...	

FORM No. 54—*continued.*

Division.	Description of Materials.	Outturn in Cubic Feet.							Remarks.
		Selection Fellings.	Clearances.	Thinnings.	Total.	Removed by			
						Government Agency.	Purchasers.	Free Grants.	Right-holders.
Belgaum—*continued.*	Blackwood logs ... No.	...	16	...	16	16	...	...	
	Do. poles... ... ,,	...	...	22	22	...	22	...	...
	Firewood ... Stacks.	...	19,664	96	19,760	19,664	96	...	...
	Do. ... Cart-loads.	...	2,415	1,938	4,353	...	4,353	...	...
	Do. ...Bullock-loads	...	...	715	715	...	715	...	...
	Do. ... Cubic feet.	...	28,93,020	...	28,93,020	28,93,020	...	...	...
	Do. ... Head-loads.	...	8,060	1,07,574	1,15,634	...	1,15,634	...	...
	Do. ...Donkey-loads	...	...	6	6	...	6	...	...
	Samplewood ... Cubic feet.	...	5,440	...	5,440	5,440	...	...	...
	Lightingwood ... Do.	...	2,000	...	2,000	2,000	...	...	...
	Karvi ... ... Cart-loads.	...	...	228	228	...	228	...	...
	Toddy trees	...	...	4	4	...	4	...	...
	Thorns ... ... Cart-loads.	...	...	90	90	...	90	...	...
	Do. ... Bullock-loads.	...	...	115	115	...	115	...	...
	Charcoal ... Maunds.	...	...	622$\frac{3}{7}$	622$\frac{3}{7}$	...	622$\frac{3}{7}$	...	...
	Sandalwood	...	...	1	1	1	...	...	...
	Do. pieces	...	...	4	4	...	4	...	...
	Agricultural implements ...	...	...	9	9	...	9	...	...
	Babul trees	...	...	317	317	...	317	...	...
	Total ...	5,984	29,47,673	1,16,758$\frac{3}{7}$	30,70,415$\frac{3}{7}$	29,43,183	1,24,507$\frac{3}{7}$	2,725	...
Dhárwár.	Teak rafters ... ... No.	11,723	...	...	11,723	11,305	418	...	...
	Matti do. ... ... ,,	1,263	...	...	1,263	1,097	166	...	...
	Jiraitiwood ... ... ,,	3,554	...	17,834	21,388	18,097	3,291	...	...
	Sleepers... ... ... ,,	32	...	...	32	...	32	...	...
	Round pieces	36	...	...	36	...	36	...	...
	Bambus... ... .. No.	...	...	3,14,497	3,14,497	...	3,14,497	...	...
	Do. (dry) ... Cart-loads.	...	...	11	11	...	11	...	...
	Do. pieces	...	...	7,212	7,212	...	7,212	...	...
	Firewood ... Stacks.	1,294	...	9,688	10,982	...	10,982	...	...
	Do. ... Cart-loads	...	...	205	205	...	205	...	...
	Do. pieces	...	...	1,000	1,000	...	1,000	...	...
	Total ...	17,902	...	3,50,447	3,68,349	30,499	3,37,850	...	...
Bijápur.	Implements of husbandry ..	...	...	60	60	...	60	...	...
	Mango tree	...	..	1	1	...	1	...	...
	Babulwood pieces	...	...	19	19	...	19	...	...
	Maswal,&c.,rafters. Head-loads	...	...	4,189	4,189	...	4,189	...	...
	Total ...	...	...	4,269	4,269	...	4,269	...	...
Kolába	Teak trees	...	1,32,791	...	1,32,791	16,655	1,16,136	...	...
	Firewood ... Khandis.	...	27,000	...	27,000	...	27,000	...	...
	Total ..	...	1,59,791	...	1,59,791	16,655	1,43,136	...	...
Ratnágiri.	Teak poles, &c.	...	...	21,949	21,949	21,191	758	...	...
	Injaili do.	...	...	1,064	1,064	1,064	...	...	...
	Firewood ... Khandis.	...	...	422	422	369	53	...	...
	Total ...	...	...	23,435	23,435	22,624	811	...	...

Conservator's Office, Southern Circle:
Dated Belgaum, 19th October 1888.

J. L. L. MACGREGOR,
Conservator of Forests, Southern Circle.

FORM No. 55.

FOREST DEPARTMENT, BOMBAY, SOUTHERN CIRCLE.

Outturn of Minor Produce for 1887-88.

Division	Description of Produce.	PRODUCE REMOVED OR UTILIZED.									
		By Government agency.		By Purchasers.		By Free Grants.		By Right-holders.		Total.	
		Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
			Rs. a. p.		Rs. a. p.		Rs. a. p.		Rs. a. p.		Rs. a. p.
Northern Division of Kanara.	Hirda ... ... Khandis.	1,725	21,025 0 0	...	.....	...	.....	...	...	1,725	21,025 0 0
	Shigekai	...	.....	...	290 0 0	...	.....	...	...	...	290 0 0
	Bambus	...	.....	30,52,141	34,776 0 0	16,100	72 0 0	...	...	30,68,241	34,848 0 0
	Do. stakes	...	.....	20	1 0 0	...	.....	...	...	20	1 0 0
	Fees on bambus from Medars ...	...	.....	...	20 0 0	...	.....	...	...	...	20 0 0
	Grazing fees	...	.....	...	6,285 0 0	...	.....	...	...	...	6,285 0 0
	Honey	...	.....	...	1,572 0 0	...	.....	...	...	...	1,572 0 0
	Cinnamon	...	.....	...	55 0 0	...	.....	...	...	...	55 0 0
	Pepper	...	.....	...	16 0 0	...	.....	...	...	...	16 0 0
	Fruit farm...	...	.....	...	28 0 0	...	.....	...	...	...	28 0 0
	Nux vomica	...	.....	...	15 0 0	...	.....	...	...	...	15 0 0
	Canes ... Head-loads.	...	.....	57	14 0 0	...	.....	...	...	57	14 0 0
	Creepers for baskets	...	.....	142	2 0 0	...	.....	...	...	142	2 0 0
	Tapping fees on Baini trees ...	...	.....	687	43 0 0	...	.....	...	...	687	43 0 0
	Stones	...	.....	12,780	20 0 0	...	.....	...	...	12,780	20 0 0
	Earth ... ... Cubic feet.	...	.....	1,600	1 0 0	...	.....	...	...	1,600	1 0 0
	Total ...	1,725	21,025 0 0	30,67,427	43,138 0 0	16,100	72 0 0	...	...	30,85,252	64,235 0 0
Central Division of Kanara.	Bambus	...	.....	3,41,146	6,903 15 5	700	6 4 0	...	...	3,41,846	6,910 3 5
	Seeds	...	.....	6,36,125	5,646 7 0	3,200	8 0 0	...	...	6,39,325	5,654 7 0
	Reeds	...	.....	32,450	62 13 0	2,000	2 8 0	...	...	34,450	65 5 0
	Bambus on contract	...	.....	...	76 8 0	...	.....	...	...	...	76 8 0
	Tapping fees on Baini trees ...	...	.....	390	24 6 0	...	.....	...	...	390	24 6 0
	Grazing fees	...	.....	...	6,729 15 9	...	.....	...	...	...	6,729 15 9
	Grass ... ... Bundles.	14,423	51 12 9	1,000	16 0 0	...	.....	...	...	15,423	67 12 9
	Earth ... ... Cart-load.	...	.....	144	9 0 0	...	.....	...	...	144	9 0 0
	Hirda ... ... Khandis.	149	1,549 11 1	...	.....	...	.....	...	...	149	1,549 11 1
	Shigekai ... ... Do. ...	6	119 4 1	...	.....	...	.....	...	...	6	119 4 1
	Shigebark ... ... Do. ...	...	.....	77	96 8 6	...	.....	...	...	77	96 8 6
	Canes ... Head-loads.	...	.....	162	42 8 0	...	.....	...	...	162	42 8 0
	Honey	...	.....	...	1,859 0 0	...	.....	...	...	...	1,859 0 0
	Rantal, Rampatri	...	.....	...	4,770 0 0	...	.....	...	...	...	4,770 0 0
	Pepper	...	.....	...	621 0 0	...	.....	...	...	...	621 0 0
	Cinnamon	...	.....	...	368 0 0	...	.....	...	...	...	368 0 0
	Kaju fruits...	...	.....	...	7 2 0	...	.....	...	...	...	7 2 0
	Total ...	14,578	1,720 11 11	10,11,494	27,233 3 8	5,900	16 12 0	...	...	10,31,972	28,970 11 7
Southern Division of Kanara.	Hirda ... ... Khandis.	1,982	22,318 1 6	...	.....	...	.....	...	...	1,982	22,318 1 6
	Shigekai ... ... Do. ...	33	641 6 4	...	.....	...	.....	...	...	33	641 6 4
	Bambus	...	.....	1,59,353	951 3 0	1,850	12 4 0	...	...	1,61,203	963 7 4
	Grazing fees	...	.....	...	8,423 8 0	...	.....	...	...	...	8,423 8 0
	Honey	...	.....	...	938 8 0	...	.....	...	...	...	938 8 0
	Palm trees	...	.....	111	129 0 0	...	.....	...	...	111	129 0 0
	Thorns ... ... Cart-loads.	...	.....	11	1 6 0	...	.....	...	...	11	1 6 0
	Cane ... ... Loads.	...	.....	467	116 12 0	23	5 12 0	...	...	490	122 8 0
	Cinnamon and Rampatri ...	...	.....	...	823 8 0	...	.....	...	...	...	823 8 0
	Tapping and Quarry fees ...	...	.....	...	74 3 0	...	.....	...	...	...	74 3 0
	Wild pepper	...	.....	...	31 3 0	...	.....	...	...	...	31 3 0
	Alekeretu	...	.....	...	15 9 6	...	.....	...	...	...	15 9 6
	Shig bark ... ... Maunds.	...	.....	901	225 3 4	...	.....	...	...	901	225 3 4
	Rajurbetta	...	.....	...	3,320 0 0	...	.....	...	...	...	3,320 0 0
	Catechu	...	.....	...	3,720 0 0	...	.....	...	...	...	3,720 0 0
	Hadebari leaves ... Loads.	...	.....	53	6 4 0	...	.....	...	...	53	6 4 0
	Heart of palm ... Do. ...	...	.....	85	21 4 0	...	.....	...	...	85	21 4 0
	Total ...	2,015	22,959 7 10	1,60,981	18,802 12 10	1,873	18 0 0	...	...	1,64,869	41,780 4 4
Belgaum.	Hirda ... ... Khandis.	6,923	68,626 2 0	...	.....	...	.....	...	...	6,923	68,626 2 0
	Bambus	...	.....	44,909	1,347 5 6	...	.....	...	...	44,909	1,347 5 6
	Mejar Bambus	...	.....	70,975	1,414 8 0	...	.....	...	...	70,975	1,414 8 0
	Sheeds	...	.....	5,02,532	4,985 6 0	6,100	15 4 0	...	...	5,08,632	5,000 10 0
	Chiva	...	.....	40,500	202 8 0	...	.....	...	...	40,500	202 8 0
	Tapping toddy trees	...	.....	61	3 13 0	...	.....	...	...	61	3 13 0
	Grazing fees	...	.....	...	17,030 9 6	...	.....	...	...	...	17,030 9 6
	Grass	...	.....	...	3,311 14 6	...	.....	...	...	...	3,311 14 6
	Honey	...	.....	82	241 13 0	...	.....	...	...	82	241 13 0
	Shigekai ... ... Khandis.	...	.....	300	416 3 0	...	.....	...	...	300	416 3 0
	Cinnamon ... ... do. ...	...	.....	400	161 9 0	...	.....	...	...	400	161 9 0
	Gum, &c.	...	.....	1,116	663 8 6	...	.....	...	...	1,116	663 8 6
	Coffee ... ... Seers.	...	.....	10	0 9 0	...	.....	...	...	10	0 9 0
	Tamarind	...	.....	106	73 12 6	...	.....	...	...	106	73 12 6
	Ta wad bark ... Bullock-loads.	...	.....	132	12 6 0	...	.....	...	...	132	12 6 0
	Do. ... Head-loads.	...	.....	503	47 2 6	...	.....	...	...	503	47 2 6
	Bandurgi leaves ... do. ...	...	.....	83	3 14 3	...	.....	...	...	83	3 14 3
	Stones ... ... Cart-loads	...	.....	8,497	532 9 3	...	.....	...	...	8,497	532 9 3
	Do. ... ... Cubic feet.	...	.....	10,19,536	3,186 0 9	...	.....	...	...	10,19,536	3,186 0 9
	Do. ... Bullock-loads	...	.....	3,983	62 3 9	...	.....	...	...	3,983	62 3 9
	Earth ... Head-loads.	...	.....	21	0 5 3	...	.....	...	...	21	0 5 3
	Total ...	6,923	68,626 2 0	16,93,746	33,698 1 3	6,100	15 4 0	...	...	17,06,769	1,02,339 7 3

FORM No. 55—*continued.*

Division.	Description of Produce.	Produce removed or utilized.									
		By Government agency.		By Purchasers.		By Free Grants.		By Right-holders.		Total.	
		Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
			Rs. a. p.		Rs. a. p.		Rs. a. p.		Rs. a. p.		R. a. p.
Dhárwár.	Hirda ... ... Bags.	23	82 6 9	...	17 8 0	...	...	...	...	23	99 14 9
	Grass ... ... Pullies.	1,000	1 4 0	...	.....	...	.....	...	...	1,000	1 4 0
	Thorns ... ... Loads.	...	.....	2,076	174 8 0	...	.....	...	...	2,076	174 8 0
	Toddy tree branches ... Loads.	...	.....	511	37 1 4	...	.....	...	...	511	37 1 4
	Royalty for removing toddy tree branches ...	...	.....	...	23 0 0	...	.....	...	...	...	23 0 0
	Do. for tapping toddy trees...	...	.....	644	163 8 0	...	.....	...	...	644	163 8 0
	Do. Tarwad bark	...	.....	...	1,226 7 0	...	.....	...	...	...	1,226 7 0
	Do. Babul pods...	...	.....	...	112 15 0	...	.....	...	...	...	112 15 0
	Do. Banadargi fruits... ...	...	.....	...	12 0 0	...	.....	...	...	...	12 0 0
	Do. Mango fruits	...	.....	...	18 10 6	...	.....	...	...	...	18 10 6
	Do. Tamarind fruits	...	.....	...	11 12 0	...	.....	...	...	...	11 12 0
	Do. Karanj fruits	...	.....	...	29 0 0	...	.....	...	...	...	29 0 0
	Do. Jujubs do.	...	.....	...	2 0 0	...	.....	...	...	...	2 0 0
	Do. Marking nuts	...	.....	...	22 0 0	...	.....	...	...	...	22 0 0
	Do. Honey	...	.....	...	114 3 0	...	.....	...	...	...	114 3 0
	Gum...	...	.....	...	15 0 0	...	.....	...	...	...	15 0 0
	Grass madi	...	.....	...	4 10 0	...	.....	...	...	...	4 10 0
	Do. thatching	...	.....	...	93 12 0	...	.....	...	...	...	93 12 0
	Do. mat	...	.....	...	1 2 0	...	.....	...	...	...	1 2 0
	Stones ... ... Loads.	...	.....	4,419	309 0 8	...	.....	...	...	4,419	309 0 8
	Earth ... ... Do.	...	.....	16	1 0 0	...	.....	...	...	16	1 0 0
	Manure	...	.....	...	28 10 0	...	.....	...	...	...	28 10 0
	Total ...	1,023	83 10 9	7,666	2,417 11 6	...	.....	...	...	8,689	2,501 6 3
Bijápur.	Large stone ... Cart-loads.	...	.....	7,051	1,023 9 0	...	.....	...	There are no right-holders except in regard to free grazing and rab, the quantity and value of which cannot be assessed.	7,051	1,023 9 0
	Do. ... Donkey-loads.	...	.....	813	16 15 0	...	.....	...		813	16 15 0
	Small stones... Cart-loads.	...	.....	21,911	1,320 8 0	...	.....	...		21,911	1,320 8 0
	Do. ... Bullock-loads.	...	.....	2,178	14 8 6	...	.....	...		2,178	14 8 6
	Do. ... Donkey-loads.	...	.....	215	2 3 10	...	.....	...		215	2 3 10
	Do. ... Head-loads.	...	.....	1,872	9 12 0	...	.....	...		1,872	9 12 0
	Do. ... Cubic feet.	...	.....	2,59,716	499 1 10	...	.....	...		2,59,716	499 1 10
	Do. ... Auction sale	...	.....	...	55 0 0	...	.....	...		...	55 0 0
	Earth ... Cart-loads.	...	.....	815	19 11 0	...	.....	...		815	19 11 0
	Do. ... ... Bullock-loads.	...	.....	1,278	21 11 6	...	.....	...		1,278	21 11 6
	Do. ... ... Donkey-loads.	...	.....	2,448	25 8 0	...	.....	...		2,448	25 8 0
	Do. ... ... Head-loads.	...	.....	2,404	12 8 4	...	.....	...		2,404	12 8 4
	Tumri leaves, ...	...	.....	907	56 12 0	...	.....	...		907	56 12 0
	Do. Bullock-loads.	...	.....	23	2 14 0	...	.....	...		23	2 14 0
	Banadargi leaves ... Do. ...	...	.....	108	13 8 0	...	.....	...		108	13 8 0
	Do. ... Head-loads.	...	.....	6,276	402 2 0	...	.....	...		6,276	402 2 0
	Hulagali ... Do. ...	...	.....	133	8 5 0	...	.....	...		133	8 5 0
	Red earth ... Cart-loads.	...	.....	235	36 11 6	...	.....	...		235	36 11 6
	Do. ... Bullock-loads.	...	.....	1,525	47 10 6	...	.....	...		1,525	47 10 6
	Do. ... Donkey-loads.	...	.....	52	3 3 0	...	.....	...		52	3 3 0
	Do. ... Head-loads.	...	.....	567	8 13 9	...	.....	...		567	8 13 9
	Babul pods	...	.....	...	415 12 0	...	.....	...		...	415 12 0
	Honey	...	.....	...	3 0 0	...	.....	...		...	3 0 0
	Mango fruits	...	.....	...	2 0 0	...	.....	...		...	2 0 0
	Tamarind	...	.....	...	5 2 0	...	.....	...		...	5 2 0
	Tarwad bark	...	.....	...	344 0 0	...	.....	...		...	344 0 0
	Gum...	...	.....	...	142 0 0	...	.....	...		...	142 0 0
	Total ...	...	.....	3,10,027	4,512 14 9	...	.....	...	...	3,10,027	4,512 14 9
Kolába.	Hirda, Shigekai, Apta and Temburni leaves	...	.....	...	700 0 0	...	.....	...	...	...	700 0 0
Ratnágiri.	Hirda ... ... Maund...	42	42 0 0	...	.....	...	.....	...	...	42	42 0 0

Conservator's Office, Southern Circle:
Dated Belgaum, 19th October 1888.

J. L. L. MACGREGOR,
Conservator of Forests, Southern Circle.

Account of Timber and other Produce cut or collected by Government Agency and brought to [illegible]

Particulars.	Number or Quantity.	Cubic feet.	Total of each Head. Number or Quantity.	Total of each Head. Cubic feet.
TIMBER.				
Balance at commencement of the year.				
Northern Division of Kánara. — Teakwood	3,253	98,587		
Do. posts ...	5	65		
Do. round pieces.	2,798	.....		
Do. sleepers ...	961	.....		
Do. slabs ...	19,973	.....		
Junglewood	735	17,092		
Blackwood	32	782	27,757	1,16,526
Central Division of Kánara. — Teakwood	...	17,936		
Do. logs ...	901	13,792		
Do. poles ...	59	.....		
Do. slabs ...	26,912	.....		
Do. round pieces.	16,014	.....		
Do. sleepers ...	3,056	.....		
Blackwood ...	...	9		
Do. logs ...	51	698		
Junglewood	...	13,071		
Do. logs ...	919	14,007		
Miscellaneous pieces ...	...	50		
Brakes for traffic carts...	7	.....		
Sitting boards ...	88	.....	48,007	59,563
Southern Division of Kánara. — Teakwood	315	6,568		
Teak poles	1,981	7,659		
Do. round pieces ...	821	.....		
Do. sleepers ...	638	.....		
Do. slabs	59,997	.....		
Blackwood	2	23		
Junglewood	935	16,791		
Do. poles ...	42	110		
Sandalwood billets ...	433	.....		
Do. saw-dust bags	5	.....	65,169	31,151

Particulars.	Number or Quantity.	Cubic feet.	Total of each Head. Number or Quantity.	Total of each Head. Cubic feet.
Removed by purchasers from Depôts.				
Teakwood	5,234	1,55,386		
Do. posts	5	65		
Do. poles	36,963	3,312		
Do. trees	2,899	.....		
Do. logs	1,824	20,951		
Do. sleepers	86,710	.....		
Do. slabs	74,715	.....		
Do. end pieces	424	.....		
Do. round pieces	768	.....		
Do. planks...	67	.....		
Do. rafters...	16,061	.....		
Do. sotas	1,742	.....		
Blackwood	202	4,272		
Do. logs	39	248		
Do. poles	2	.....		
Junglewood	3,665	48,880		
Do. logs	388	6,450		
Do. poles	17,062	.....		
Gayliwood pieces	100	31		
Jirayatwood pieces	29,613	.....		
Do. stacks	141	.....		
Poles from branches	803	.....		
Sitting boards	16	.....		
Matti rafters	1,208	.....		
Casuarina poles	25	.....		
Injayali sotas	54	.....		
Do. poles	729	.....		
Miscellaneous pieces	6,303	7		
	8,782	K. m. lbs. 145 14 26½		
Sandalwood	10	.....		
Do. trees	93	.....		
Do. roots	4	3 15 0		
Do. chips and saw-dust ... Cart-loads	5	... ..		
Do. do. Heaps ...			2,96,656	2,39,602 K. m. lbs. 149 9 26½

Belgaum Division.	Teak trees for sleepers	501	.....			*Sold locally.*					
	Do. round pieces.	183	.....			Teakwood	...	16			
	Do. sleepers ...	657	.....			Do. poles	22,577	.....			
	Junglewood	6,158	.....			Do. pieces	8	.....			
	Slabs	1,589	.....			Blackwood poles	25	.....			
				9,088	.....	Do. pieces...	7	.....			
						Junglewood	19	130			
Dharwár Division.	Teak rafters	11,104	.. ...			Do. poles...	98	.....			
	Matti do.	1,159	.....			Do. pieces	63	.....			
	Miscellaneous do. ...	120	.....			Casuarina poles	1,800	.....			
	Slabs	6,416	.....			Miscellaneous pieces	5,678	.....			
	Jiráyatwood	33,761	.....			Brakes for traffic carts	1	.....			
			K. m. lbs.						30,276		146
	Sandalwood billets ...	356	5 16 0								
	Do. roots ...	80	.....			*Converted in Depôts.*					
	Do. chips and saw-dust..	...	1 15 0		K. m. lbs.						
				52,996	7 11 0	Teak round pieces	52,840	.....			
						Teakwood	...	2,082			
									52,840		2,082
Kolába Division.	Beams	19	.....			*Lost or written off as useless.*					
	Teak pieces	119	.....			Teak sleepers	221	.....			
	Poles, 1st class ...	400	.....			Jirayatwood	590	.....			
	Do. 2nd do. ...	495	.....						811	.....	
	Do. 3rd do. ...	540	.....								
	Do. 4th do. ...	418	.....			*Used by the Department.*					
	Miscellaneous poles ...	447	.....								
				2,438	.....	Teakwood	12	737			
						Brakes for traffic carts	7	.....			
Ratnágiri Division.	Teak sotas	726	.....			Junglewood	...	517			
	Do. poles, 1st class ...	915	.....						19		1,254
	Do. 2nd do. ...	1,597	.....								
	Do. 3rd do. ...	3,136	.....			*Transferred to other Sale Depôts.*					
	Do. 4th do. ...	2,329	.....								
	Casuarina poles ...	25	.....			Teakwood	...	14,790			
	Miscellaneous pieces ...	1,337	.....			Blackwood	...	23			
				10,065	.....	Junglewood	...	1,347			
						Teak sleepers	14	.....			
									14		16,160
	Total Balance ...	...	.....	2,15,520	2,07,240						
					K. m. lbs.	*Balance at close of the year.*					
					7 11 0						
						Northern Division of Kánara. Teakwood	4,474	1,27,257			
						Do. pieces ...	3,356	.....			
						Do. sleepers ...	5,527	.....			
						Do. slabs. ...	7,938	.....			
						Blackwood	27	588			
						Do. pieces ...	1	.....			
						Junglewood... ...	943	22,172			
									22,266		1,50,017
Received from the forest in Depôts.											
Teakwood		6,586	1,91,436								
Do. logs		3,417	62,606								
Do. trees		3,388	.....								
Do. poles		26,842	.....								
Do. round pieces		37,562	.....								
Do. rafters		11,671	.....								
Do. end pieces		250	.....								
Do. sleepers		5,391	.....								
Do. slabs		4,446	.....								
Do. sotas		1,016	.....								

Particulars.	Number or Quantity.	Cubic feet.	Total of each Head. Number or Quantity.	Total of each Head. Cubic feet.
Received from the forest in Depôts—continued.				
Blackwood	199	4,097		
Do. logs	34	230		
Do. poles	2	.....		
Junglewood	2,342	53,371		
Do. logs	323	7,740		
Do. poles...	17,095	122		
Gayliwood pieces	100	31		
Jirayatwood pieces	19,024	.....		
Do. stacks	153	.....		
Matti rafters	842	.....		
Miscellaneous pieces	5,011	.....		
Injaili sotas	54	.....		
Do. poles	729	.....		
		K. m. lbs.		
Sandalwood	8,017	151 5 5½		
Do. trees	10	.....		
Do. roots	38	.....		
Chips and saw-dust	...	2 0 0		
			1,54,542	3,19,633
				K. m. lbs.
Received from the Forests and sold locally.				153 5 5½
Teakwood	...	16		
Do. poles	22,577	.....		
Do. pieces	8	.....		
Blackwood poles	25	.....		
Do. pieces...	7	.....		
Junglewood	19	130		
Do. poles	98	.....		
Do. pieces	63	.....		
Casuarina poles	1,800	.....		
Miscellaneous	5,678	.....		
Brakes for traffic carts	1	.....		
			30,276	146
Received by conversion in Depôts.				
Teak sleepers	87,009	.....		
Do. slabs	49,357	.....		
Round pieces	1,913	.....		
Poles from branches	2,596	.....		
	49			

TIMBER—*continued.*

Particulars.		Number or Quantity.	Cubic feet.	Total of each Head. Number or Quantity.	Total of each Head. Cubic feet.
Balance at close of the year—continued.					
Central Division of Kánara.	Teak round pieces ...	5,683	.....		
	Do. sleepers ...	3,163	.....		
	Do. slabs	23,053	.....		
	Do. logs	2,494	55,447		
	Teakwood	...	19,603		
	Do. poles ...	59	.....		
	Do. round board.	1	.....		
	Blackwood	...	10		
	Do. logs ...	46	680		
	Junglewood... ...	...	12,665		
	Do. logs ...	854	15,297		
	Jirayatwood stacks ...	12	.....		
	Sitting boards ...	72	.....		
	Miscellaneous pieces ...	...	43		
				35,437	1,03,745
Southern Division of Kánara.	Teak	434	9,664		
	Do. poles	1,059	4,347		
	Do. pieces ...	530	.....		
	Do. sleepers ...	599	.....		
	Do. slabs	61,694	.....		
	Blackwood	4	92		
	Junglewood ...	890	17,438		
	Do. poles ...	75	232		
			K. m. lbs.		
	Sandalwood... ..	24	11 6 21		
				65,309	31,773
					K. m. lbs.
					11 6 21
Belgaum Division.	Teak trees	245	.....		
	Do. sleepers ...	1,492	.....		
	Do. slabs	1,165	.....		
	Poles from branches ...	1,793	.....		
	Junglewood... ...	2,348	.....		
				7,043	.....
Dhárwár Division.	Teak rafters ...	6,714	.....		
	Matti do. ...	793	.....		
	Jirayatwood ...	22,277	.....		
	Slabs	125	.....		
	Miscellaneous rafters...	120	.....		
	Sandalwood roots ...	25	.....		
				30,054	.....

Teak planks		67	.....		
End pieces of teak logs		174	.....		
Round teak board		1	.....		
Teakwood		...	1,600		
Sandalwood saw-dust	Cart-loads.	4	.....		
Do. do. ...	Heaps.	5	.....		
Received by transfer from Sale Depôts.				1,41,175	1,600
Teakwood		...	14,79		
Blackwood		...	23		
Junglewood		...	1,347		
Teak sleepers		14	.....		
				14	16,160
Total Timber		.....		5,41,527	5,44,779 K. m. lbs. 160 16 5½

FIREWOOD.

Balance at commencement of the year.					
Central Division of Kánara—					
Firewood	Stacks.	455	.....		
				455	.....
Belgaum—					
Firewood	Stacks.	11,183	.....		
Do. ...	Cubic feet.	...	3,96,089		
				11,183	3,96,089
Dhárwár—					
Firewood	Stacks.	3,199	.....		
				3,199	.....
Ratnágiri—					
Firewood	Khandis.	533½	.....		
				533½	.....
Total Balance			.....	15,370½	3,96,089
Received during the year.					
Firewood	Tons.	868	.....		
Do. ...	Cubic feet.	...	33,20,517		
Do.	Stacks.	28,400	.....		
Do. ...	Head-loads.	9,211	.....		
Do. ...	Cart-loads.	2,466	.....		
Do.	Khandis.	369	.....		
Charcoal	Muras.	275	.....		
				41,589	33,20,517
Total Firewood			.....	56,959½	37,16,606

Kolába Division.	Teak poles and beams		631	.....	
	Miscellaneous ...		126	.....	
					757 .....
Ratnágiri Division.	Teak pieces... ...		45	.....	
					45 .....
Total Timber				.....	5,41,527 5,44,779 K m. lbs. 160 16 5½

Removed by purchasers.					
Firewood	Tons.	583	.....		
Do. ...	Cubic feet.	...	32,69,931		
Do. ...	Stacks.	29,861	.....		
Do. ...	Head-loads.	9,211	.....		
Do. ...	Cart-loads.	2,466	.....		
Do. ...	Khandis.	902½	.....		
Charcoal	Muras.	252	.....		
				43,275½	32,69,931
Lost or written off as useless.					
Firewood	Stacks.	66	.....		
				66	.....
Balance at close of the year.					
Northern Division of Kánara—					
Firewood	Tons.	285	.....		
Charcoal	Muras.	23	.....		
				308	.....
Central Division of Kánara—					
Firewood	Stacks.	38	.....		
				38	.....
Belgaum—					
Firewood	Stacks.	11,003	.....		
Do. ...	Cubic feet.	...	4,46,675		
				11,003	4,46,675
Dhárwár—					
Firewood	Stacks.	2,269	.....		
				2,269	.....
Total Firewood ...		...	.....	56,959½	37,16,606

Particulars.	Number or Quantity.	Cubic Feet.	Total of each Head. Number or Quantity.	Total of each Head. Cubic feet.	Particulars.	Number or Quantity.	Cubic feet.	Total of each Head. Number or Quantity.	Total of each Head. Cubic feet.
GRASS AND OTHER MINOR PRODUCE.									
Balance at commencement of the year.					*Removed by purchasers.*				
Northern Division of Kánara—					Hirda ... ... Khandis.	...	11,464 0		
Hirda ... ... Khandis.	...	540 0			Shigekai ... ... do.	...	77 8		
			...	540	Grass ... ... Bundles.	15,423	.....		
Central Division of Kánara—								15,423	11,541 8
Hirda ... ... Khandis.	...	0 6½			*Used by the Drpartment.*				
Shigekai ... ... do.	...	1 16			Grass ... ... Bundles.	74,495	.....		
Grass ... ... Bundles.	1,76,536	.....						74,495	.....
			1,76,536	2 2½	*Balance at close of the year.*				
Southern Division of Kánara—					Northern Division of Kánara—				
Hirda ... ... Khandis.	...	441 2½			Hirda ... ... Baskets.	2,017	.....		
Shigekai ... ... do.	...	39 0						2,017	.....
			...	480 2½	Central Division of Kánara—				
Belgaum—					Hirda ... ... Khandis.	...	135 10½		
Hirda ... ... Khandis.	...	694 0			Shigekai ... ... do.	...	5 18¾		
					Grass ... ... Bundles.	1,65,518	.....		
			...	694 0				1,65,518	141 9¼
Total Balance ...	...	.....	1,76,536	1,716 5	Southern Division of Kánara—				
					Hirda ... ... Khandis.	...	355 14		
Received during the year.								...	355 14
					Belgaum—				
Hirda ... ... Khandis.	...	10,383 15½			Hirda ... ... Khandis.	...	104 0		
Do. ... ... Baskets.	2,017	.....						...	104 0
Shigekai ... ... Khandis.	...	42 10¾			Dhárwár—				
Grass ... ... Bundles.	79,900	.....			Grass ... ... Bundles.	1,000	.....		
			81,917	10,426 6¼				1,000	.....
Total Minor produce ...	...	.....	2,58,453	12,142-11¼	Total Minor produce ...	...	.....	2,58,453	12,142-11¼

Note—The opening balances now given under Belgaum, Dhárwár and Central Division of Kánara, under the head "Timber," differ from the closing balances under the same Divisions in the statement for 1886-87, which is owing to certain mistakes, now rectified, in the Divisional Officers' statements for 1886-87.

Conservator's Office, Southern Circle :
Dated Belgaum, 19th October 1888.

J. L. L. McGREGOR,
Conservator of Forests, Southern Circle.

FORM No. 57.

Forest Department, Bombay, Southern Circle.

Abstract showing the Value of Timber and other Produce at Sale Depôts for the yaer 1882-83.

Description of Timber and other Produce.	On hand at commencement of the year.			On hand at close of the year.			Difference in Value.		Remarks.
	No.	Cubic feet.	Value.	No.	Cubic feet	Value.	In favour of the year.	Against the year.	
			TIMBER.						
Northern Division of Kánara.			Rs.			Rs.	Rs.	Rs.	
Teakwood	3,253	98,587	1,17,780	4,474	1,27,257	1,96,500	78,720	...	
Blackwood	32	782	682	27	588	552	...	130	
Junglewood	735	17,092	15,540	943	22,172	20,964	5,424	...	
Teak posts	5	65	28	...	...	.....	...	28	
Do. round pieces ...	2,798	...	6,894	3,356	...	10,068	3,174	...	
Do. sleepers ...	961	...	1,922	5,527	...	11,054	9,132	...	
Do. slabs	19,973	...	2,000	7,938	...	800	...	1,200	
Blackwood pieces ...	...	...	...	1	...	2	2	...	
Total ...			1,44,846			2,39,940	96,452	1,358	
Central Division of Kánara.									
Logs	1,871	28,497	22,755	3,394	71,424	84,360	61,605	...	
Teak round pieces for sleepers	16,014	...	80,070	5,683	...	28,415	...	51,655	
Do. sleepers	3,056	...	7,294	3,163	...	7,580	286	...	
Do. slabs...	26,912	...	6,791	23,053	...	2,305	...	4,486	
Do. poles	59	...	177	59	...	177	...	...	
Brakes for traffic carts ...	7	...	0-3-0	...	...	.....	...	0-3-0	
Sitting boards	88	...	12	72	...	10	...	2	
Miscellaneons scantlings...	...	31,066	62,132	...	32,321	64,642	2,510	...	
Round teak board ...	...	...	...	1	...	0-5-0	0-5-0	...	
Jiraitwood stacks	...	...	...	12	...	24	24	...	
Total ...			1,79,231-3-0			1,87,513-5-0	64,425-5-0	56,143-3-0	
Southern Division of Kánara.									
Teakwood	315	6,568	9,047	434	9,664	13,723	4,676	...	
Blackwood	2	23	19	4	92	123	104	...	
Junglewood	935	16,791	14,531	890	17,438	15,345	814	...	
Teak poles	1,981	7,659	3,160	1,059	4,347	1,845	...	1,315	
Junglewood poles	42	110	38	75	232	46	8	...	
Round teak sleeper pieces.	821	...	...	530	...	.....	...	...	
Sleepers	638	...	1,276	599	...	1,198	...	...	
Slabs	59,997	...	3,749	61,694	...	3,856	107	78	
Sandalwood	433 and 5 bags.	K. m. s. 1-17-22	210	24	K. m. s. 11-6-21	150	...	60	
Total ...			32,030			36,286	5,709	1,453	
Belgaum.									
Teak trees...	501	...	2,004	245	...	1,700	...	304	
Sleepers	657	...	1,476	1,492	...	3,000	1,524	...	
Slabs	1,589	...	180	1,165	...	110	...	70	
Poles from branches ...	...	...	...	1,793	...	1,500	1,500	...	
Junglewood poles... ...	6,158	...	400	1,898	...	220	...	180	
Do. logs	...	...	...	450	...	2,500	2,500	...	
Teak round pieces ...	183	...	366	...	...	.....	...	366	
Total ...			4,426			9,030	5,524	920	

FORM No. 57—*continued.*

Description of Timber and other Produce.	On hand at commencement of the year.			On hand at close of the year.			Difference in Value.		Remarks.
	No.	Cubic feet.	Value.	No.	Cubic feet.	Value.	In favour of the year.	Against the year.	
			TIMBER—*continued*						
Dhárwár.			Rs.			Rs.	Rs.	Rs.	
Teak rafters	11,104	...	...	6,714	...	.....	...	...	
Matti do.	1,159	...	18,550	793	...	19,060	510	...	
Miscellaneous rafters ...	120	...	...	120	...	.....	...	...	
Jiraitwood	33,761	...	8,440	22,277	...	14,850	6,410	...	
Slabs	175	...	25	125	...	40	15	...	
Sandalwood billets ...	356	5-16-0	120	...	...	.....	...	120	
Do. roots... ...	80	...	80	25	...	25	...	55	
Do. chips and saw-dust ...	...	1-15-0	50	...	...	.....	...	50	
Total ...			27,265			33,975	6,935	225	
Kolába.									
Teak poles and miscellaneous	2,438	...	1,200	757	...	125	...	1,075	
Ratnágiri.									
Teak poles and pieces ...	10,040	...	1,525	45	...	2	...	1,523	
Firewood ... Khandis.	...	533½							
Casuarina poles	25	...	2	...	...	.....	...	2	
Total ...			1,527			2	...	1,525	
Total Timber ...			3,90,525-3-0			5,06,871-5-0	1,79,045-5-0	62,699-3-0	
Northern Division of Kánara.			FIREWOOD.						
Firewood ... ... Tons.	...	...	...	283	...	1,520	1,520	...	
Charcoal ... ...Mudas.	...	...	...	23	...	6	6	...	
Total ...			...			1,526	1,526	...	
Central Division of Kánara.									
Firewood stacks	455	...	341	38	...	24	...	317	
Belgaum.									
Firewood stacks	11,183	...	11,183	11,003	...	11,000	...	183	
Do. ... Cubic feet.	...	396,089	23,760	...	446,675	26,800-8-0	3,040-8-0	...	
Total ...	...	...	34,943	...	...	37,800-8-0	3,040-8-0	183	
Dhárwár.									
Firewood stacks	3,199	...	3,199	2,269	...	2,269	...	930	
Total Firewood ...			38,483			41,619-8-0	4,566-8-0	1,430	

FORM No. 57—*concluded.*

Description of Timber and other Produce.	On hand at commencement of the year.			On hand at close of the year.			Difference in Value.		Remarks.
	No.	Cubic feet.	Value.	No.	Cubic feet.	Value.	In favour of the year.	Against the year.	
			MINOR PRODUCE.						
Northern Division of Kánara.			Rs.			Rs.	Rs.	Rs.	
Hirda ... Khandis.	...	540	5,400	...	183	2,069	...	3,331	
Central Division of Kánara.									
Hirda ... Khandis.	...	0-6-4	3	..	135-10-10	1,526	1,523	...	
Shigekai ... „	...	1-16-0	20	...	5-18-21	137	117	...	
Grass ... Bundles.	1,76,536	...	607	1,65,518	...	595	...	12	
Total ...			630			2,258	1,640	12	
Southern Division of Kánara.									
Hirda ... Khandis.	...	441	4,317	...	356	4,027	...	290	
Belgaum.									
Hirda ... Khandis.	...	694	4,443	...	104	962	...	3,481	
Dhárwár.									
Grass ... Bundles.	...	...	...	1,000	...	5	5	...	
Total Minor Produce ...	...	...	14,790	...	...	9,321	1,645	7,114	
Grand Total ...			4,43,798-3-0			5,57,811-13-0	1,85,256-13-0	71,243-3-0	

Net difference in favour of the year—Rs. 1,14,013-10-0.

Conservator's Office, Southern Circle :
Dated Belgaum, 19th October 1888.

J. L. L. MacGREGOR,
Conservator of Forests, Southern Circle.

FORM No. 57A.

Forest Department, Bombay, Southern Circle.

Abstract showing the Value of Dead Stock for the year 1887-88.

Description of Dead Stock.	On hand at commencement of the year.		On hand at close of the year.		Difference in Value.		Remarks.
	Number.	Value.	Number.	Value.	In favour of the year.	Against the year.	
Direction.		Rs.		Rs.	Rs.	Rs.	
Office tent 13'×13' (new)	1	450	1	450	...	...	
Do. do. do. (old)	1	450	1	450	...	...	
Tools, plant and office furniture ...	...	250	...	250	...	...	
Total ...	...	1,150	...	1,150	...	...	
Northern Division of Kánara.							
Forest bungalow at Haliyál ...	1	2,700	1	2,700	...	...	
Range Forest Office at do. ...	...	...	1	900	900	...	
Forest Nákás	9	8,711	10	9,011	300	...	
Forest bungalow at Kadra ...	1	8,100	1	8,100	...	...	
Two houses at do.	2	...	2	...	...	...	Value not known.
Kodibag Depôt-house	1	4,960	1	4,960	...	...	
Hill tent	1	350	1	350	...	...	
Tools, plant and office furniture ...	...	2,685	...	2,726	41	...	
Total ...	...	27,506	...	28,747	241	...	
Central Division of Kánara.							
Forest bungalows at Yellápur ...	2	3,050	2	3,050	...	...	
Workshop at do. ...	1	114	1	114	...	...	
Rest-house at Kolikeri	1	908	1	908	...	...	
Náka-houses	10	2,951	10	2,951	...	...	
Old Range Office at Yellápur ...	1	250	1	250	...	...	
Rest-house at Ramanguli	1	150	1	150	...	...	
Tent...	1	350	1	350	...	...	
Tools, plant and office furniture ...	...	7,128	...	7,128	...	...	
Kánara Saw Mills.							
Engine, portable, 12 H	2		2				
Anvils	2		2				
Small circular saw bench	2		2				
Crabwinch	2		2				
Horizontal frame	1		1				
Portable forge	1		1				
Quern	1	45,240	1	45,240	...	...	
Hauling machine	1		1				
Lathe	1		1				
Rack circular	1		1				
Saw-sharpening machines... ...	2		2				
Corrugated roof-shed	1		1				
Vice	1		1				
Engine, portable, 12 H	1		1				
Bench, cross cutting	1	11,064	1	11,064	...	...	
Saw-sharpening machine	1		1				
Vertical saw frame	1	3,750	1	3,750	...	...	
Saw frames...	16		16				
Engine, portable, 12 H	1	4,400	1	4,400	...	...	
Benches, small, circular saw ...	2	105	2	105	...	...	
Anvils	2	58	2	58	...	...	
Carried over ...	...	79,518	...	79,518	...	...	

FORM No. 57A—*continued.*

Description of Dead Stock.	On hand at commencement of the year.		On hand at close of the year.		Difference in Value.		Remarks.
	Number.	Value.	Number.	Value.	In favour of the year.	Against the year.	
		Rs.		Rs.	Rs.	Rs.	
Brought forward ...	...	79,518	...	79,518	...	...	
Kánara Saw Mills—continued.							
Clumber blocks	6	112	6	112	...	...	
Intermediate shaft...	1	83	1	83	...	...	
Other stores and furniture ...	...	4,926	...	6,152	1,226	...	
Total ...	...	84,639	...	85,865	1,226	...	
Southern Division of Kánara.							
Forest Nákás	15	4,202	17	4,802	600	...	
Office tent	1	350	1	350	...	...	
Tools, plant and office furniture ..	...	3,810	...	3,770	...	40	
Total ...	...	8,362	...	8,922	600	40	
Belgaum.							
Tent...	1	300	1	300	...	...	
Rest-house	1	2,500	1	2,500	...	...	
Nákás	14	6,050	14	6,050	...	...	
Tools, plant and office furniture ...	...	2,050	...	2,790	740	...	
Total ...	...	10,900	...	11,640	740	...	
Dhárwár.							
Rest-house	1	800	1	800	...	...	
Watch-houses	8	2,400	8	2,400	...	...	
Depôt-houses	2	250	2	250	...	...	
Tents	2	380	2	380	...	...	
Tools, plant and office furniture ...	...	2,240	...	2,454	214	...	
Total ...	...	6,070	...	6,284	214	...	
Bijápur.							
Office tent	1	150	1	150	...	...	
Tools, plant and office furniture ...	...	655	...	713	58	...	
Total ...	...	805	...	863	58	...	
Kolába.							
Hill tent	1	250	1	250	...	...	
Forest boat with fittings	1	1,278	1	1,278	...	...	
Tools, plant and office furniture ...	...	448	...	448	...	...	
Total ...	...	1,976	...	1,976	...	...	
Ratnágiri.							
Office tent	1	200	1	200	...	...	
Tools, plant and office furniture ...	...	150	...	172	22	...	
Total ..	...	350	...	372	22	...	

Conservator's Office, Southern Circle;
Dated Belgaum, 19th October 1888.

J. L. L. MacGREGOR.
Conservator of Forests, Southern Circle.

FORM No. 58.

FOREST DEPARTMENT, BOMBAY, SOUTHERN CIRCLE.

Summary of Revenue and Expenditure of the different Divisions during the year 1887-88.

Budget Heads.	Direction.	Belgaum Division.	Bijápur Division.	Dhárwár Division.	Northern Division of Kánara.	Central Division of Kánara.	Southern Division of Kánara.	Kolába Division.	Ratnágiri Division.	Total.
REVENUE.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
I.—Timber and other Produce removed from the Forests by Government Agency—										
a. Timber	.....	42,391 13 5	.....	69,874 1 6	2,52,503 7 8	2,52,538 6 4	40,510 5 8	14,238 4 5	8,453 8 0	6,80,509 15 0
b. Firewood and charcoal	.....	1,89,176 6 4	.....	9,052 13 0	28,061 9 6	624 4 0	.....	946 7 6	208 15 0	2,28,070 7 4
c. Bambus	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
d. Sandalwood	.....	33 6 0	.....	4,313 12 8	.....	2,381 8 11	8,155 10 8	.....	.....	14,884 6 3
e. Grass and other minor produce	.....	71,108 4 0	5 8 0	83 10 9	21,025 0 11	4,133 0 5	15,568 9 11	7 1 0	42 0 0	1,11,973 3 0
II.—Timber and other Produce removed from the Forests by Consumers or Purchasers—										
a. Timber	.....	1,452 7 6	682 8 6	647 8 9	15,488 12 5	15,691 13 5	24,500 5 8	64,673 14 9	653 11 11	1,23,791 2 11
b. Firewood and charcoal	.....	5,470 14 10	10,268 1 3	554 13 6	22,662 2 10	22,837 3 4	6,204 6 8	36,231 15 8	111 8 5	1,04,341 2 6
c. Bambus	.....	8,056 4 3	.....	5,752 1 5	34,802 9 6	12,859 11 5	949 0 0	.....	.....	62,419 10 7
d. Grazing and fodder grass	.....	16,227 0 5	5,953 12 0	16,121 5 10	6,284 4 4	6,729 15 9	8,423 8 0	1,474 11 3	312 7 11	61,527 1 6
e. Other minor produce	.....	5,140 6 4	4,580 11 9	2,417 10 10	2,055 1 6	7,787 8 6	9,358 7 10	822 2 6	57 8 2	32,219 9 5
III.—Confiscated, Drift, and Waif Wood	.....	40 0 0	3 7 0	34 9 6	5,924 6 5	43 6 7	1,277 9 1	992 8 10	102 10 7	8,418 10 0
IV.—Revenue from Forests not managed by Government.—										
a. Duty on foreign timber and other forest produce	.....	.....	.....	.....	.....	.....	.....	.....	31 6 0	31 6 0
b. Revenue from shared and private forests	.....	.....	.....	.....	.....	.....	.....	10 13 4	180 1 8	190 15 0
V.—Miscellaneous—										
a. Fines and forfeitures	.....	356 15 2	234 2 6	8 0 3	8 14 0	73 0 0	1 0 0	2,227 13 11	123 5 1	3,033 2 11
b. Refunds	63 15 8	129 9 4	10 0 0	5 7 9	26 14 0	271 15 2	58 11 3	7 13 2	30 15 6	605 5 10
c. Other sources	.....	263 4 10	454 0 7	405 0 9	268 2 0	588 7 0	360 10 6	291 0 5	2 12 4	2,633 6 5
Total Revenue	63 15 8	3,39,846 12 5	22,192 3 7	1,09,271 0 6	3,89,111 5 1	3,26,560 4 10	1,15,368 5 3	1,21,924 10 9	10,310 14 7	14,34,649 8 8
EXPENDITURE.										
A.— CONSERVANCY AND WORKS.										
I.—Timber and other Produce removed from the Forests by Government Agency—										
a. Timber	.....	10,373 9 0	0 9 0	14,795 9 1	1,07,603 14 4	1,00,035 4 5	12,047 14 3	2,759 3 10	2,137 11 3	2,49,753 11 2
b. Firewood and charcoal	.....	1,06,076 14 9	.....	2,362 15 6	15,826 2 9	150 14 0	.....	34 11 9	.....	1,24,451 10 9
c. Bambus	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
d. Sandalwood	.....	0 9 0	.....	392 15 5	.....	334 5 11	832 15 1	.....	.....	1,560 13 5
e. Grass and other minor produce	.....	20,821 13 5	.....	27 1 3	10,945 2 5	2,095 4 11	13,320 3 0	.....	23 2 4	47,232 11 4
II.—Timber and other Produce removed from the Forests by Consumers or Purchasers	.....	1,901 11 4	233 14 11	2,467 8 8	569 8 6	967 15 3	1,126 15 3	981 7 3	.....	8,249 1 2
III.—Confiscated, Drift, and Waif Wood	.....	2 12 0	.....	.....	39 6 11	0 3 9	8 14 0	74 15 10	4 6 0	130 10 6
IV.—Revenue from Forests not managed by Government—										
a. Duty on foreign Timber and other forest produce	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
b. Revenue from shared and private forests	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

V.—Rent of Leased Forests and Payments to Shareholders in Forests managed by Government	.....	.....	.....	.....	.....	.....	.....	.....	10,947 10 6	.....	10,947 10 6
VI.—Live-stock, Tools and Plant—											
a. Purchase of cattle	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
b. Feed and keep of cattle	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
c. Stores, tools and plants	.....	770 12 0	.....	87 8 0	96 0 0	850 0 4 285 8 9	.....	34 5 0	.....	20 4 0	884 5 4 1,260 0 9
VII.—Communications and Buildings—											
a. Roads and Bridges	.....	859 15 6	.....	.....	177 13 11	162 4 6	181 0 0	.....	.....	40 5 6	1,421 7 5
b. Buildings	.....	514 14 8	.....	193 15 1	1,516 3 5	172 9 7	600 0 0	46 14 6	.....	6 2 0	3,050 11 3
c. Other works	.....	53 5 0	8 3 6	240 10 0	56 12 6	288 13 3	170 4 7	.....	.....	1 4 0	819 4 10
VIII.—Demarcation, Improvement and Extension of Forests—											
a. Demarcation	.....	.....	1,222 6 0	70 8 3	25 0 0	3,961 1 8	1,039 14 11	5,270 12 3	1,961 2 3		13,550 13 4
b. Compensation for land and rights	.....	.....	.....	300 0 0	.....	.....	.....	.....	.....		300 0 0
c. Surveys and working plans	.....	903 2 8	1 8 0	37 5 3	26,635 13 7	.....	.....	3 6 0	.....		27,581 3 6
d. Plantations	.....	144 3 6	599 14 7	12 1 6	671 0 5	134 14 0	780 3 5	49 0 6	120 13 4		2,512 3 3
e. Protection from fire	.....	124 1 6	77 6 3	198 12 3	806 7 0	78 6 0	23 0 0	5 9 6	.....		1,313 10 6
f. Other works	.....	.....	.....	27 1 6	.....	.....	.....	.....	.....		27 1 6
IX.—Miscellaneous—											
a. Refunds	.....	.....	.....	.....	.....	.....	.....	.....	.....		.....
b. Law charges	.....	.....	.....	.....	.....	.....	.....	.....	.....		.....
c. Other charges	.....	116 8 6	.....	47 0 8	26 6 1	27 0 6	141 3 3 20 14 5	2 10 0	1,024 13 11 0 3 0		1,168 11 2 238 1 2
TOTAL A.—Conservancy and Works	.....	1,42,664 4 10	2,143 14 3	21,261 0 5	1,64,995 11 10	1,09,544 10 10	30,293 6 2	20,210 10 11	5,340 3 7		4,96,453 14 10
B.—ESTABLISHMENTS.											
I.—Salaries.											
a. Conservators	12,000 0 0	.....	.....	.....	.....	.....	.....	.....	.....		12,000 0 0
b. Superior Officers	.....	10,259 10 1	5,399 2 11	9,337 1 6	10,512 2 7	7,816 5 0	8,245 5 2	3,661 14 11	5,200 0 0		60,431 10 2
c. Subordinate Forest and Depôt Establishment	.....	19,744 2 4	6,815 10 9	12,342 13 1	16,312 13 2	11,921 9 5	10,794 13 7	22,477 6 10	5,147 12 0		1,05,557 1 2
d. Office Establishments	6,358 11 8	2,682 13 2	1,061 0 6	1,746 6 2	2,733 15 1	3,170 6 7	2,716 11 2	2,206 8 10	1,043 12 0		23,720 5 2
e. Deputation and special allowances	256 0 0	.....	.....	.....	.....	.....	.....	.....	.....		256 0 0
II.—Travelling Allowances.											
a. Conservators	2,697 6 4	.....	.....	.....	.....	.....	.....	.....	.....		2,697 6 4
b. Superior Officers	.....	3,871 10 2	1,909 12 2	1,928 8 8	3,237 5 3	2,710 4 9	2,520 0 0	1,354 13 5	1,603 9 4		19,135 15 9
c. Subordinate Forest and Depôt Establishments	.....	598 14 2	225 4 11	878 3 2	1,412 10 6	546 3 8	661 9 2	931 9 9	495 0 0		5,749 7 4
d. Office Establishments	2,323 4 8	770 7 0	441 8 5	553 13 3	782 4 4	811 8 11	738 12 0	681 3 11	436 14 0		7,539 12 6
III.—Contingencies.											
a. Stationery	1 2 0	225 1 5	101 6 0	151 14 6	230 14 8	314 12 5	407 10 1	408 14 11	103 1 9		1,944 13 9
b. Carriage of tents and records	845 14 0	143 14 6	90 15 9	188 4 3	529 11 5	608 1 10	194 15 0	138 3 9	129 3 9		2,869 4 3
c. Rents, rates and taxes	125 0 0	377 4 2	278 10 8	133 12 5	54 0 0	240 0 0	.....	.....	325 0 0		1,533 11 3
d. Pay of Police guards	.....	.....	.....	.....	.....	.....	.....	.....	.....		.....
e. Official postage	253 15 0	328 15 0	140 10 0	322 7 0	205 11 0	518 4 0	321 0 6	325 11 0	176 0 0		2,592 9 6
f. Sundries	241 2 1	389 7 11	128 8 3	918 9 4	763 2 10	470 4 10	547 6 3	160 0 11	159 1 4		3,777 11 9
Total, B.—Establishments	23,102 7 9	39,392 3 11	16,592 10 4	28,501 13 4	36,774 10 10	29,127 13 5	27,148 2 11	32,346 8 3	14,819 6 2		2,49,805 12 11
Grand Total of Expenditure	23,102 7 9	1,82,056 8 9	18,736 8 7	49,762 13 9	2,01,770 6 8	1,38,672 8 3	57,441 9 1	52,557 3 2	20,159 9 9		7,46,259 11 9

No. $\frac{F}{12,544}$

Forwarded to the Conservator of Forests, Southern Circle, under Section 238 of the Forest Code.

Bombay, 10th August 1888.

STEPHEN JACOB,
Accountant General.

FORM No. 59.

FOREST DEPARTMENT, BOMBAY, SOUTHERN CIRCLE.

Dr. *Account Current for the year 1887-88.* *Cr.*

	Rs. a. p.	Rs. a. p.		Rs. a. p.	Rs. a. p.
To Cash Balance	.....	105 6 4	By 1 Refunds and Drawback—		
,, VIII. Assessed Taxes—Income Tax—			Refunds Divided Heads—		
Deductions by Government from Salaries and Pensions	.....	2,266 10 10	Forest	.....	265 7 0
,, IX. Forest	.....	14,34,649 8 8	,, 3 Land Revenue—Survey and Settlement—Professional Survey—		
,, XII. Interest—			Travelling allowances to officers	.....	290 5 2
Interest on arrears of Revenue	.....	41 3 3	,, 11 Forest	.....	7,46,259 11 9
,, XXIII. Stationery and Printing—			,, Revenue Deposits—		
Other Press Receipts	.....	12 12 3	Forest	.....	32,264 14 3
Government Central Press	.....	.....	,, Advances Recoverable—		
,, Revenue Deposits—			Forest Advances	4,27,046 13 5	
Forest	.....	25,461 0 3	Objection Book Advances	2,182 0 0	
,, Advances Recoverable—			,, Tentage Advances to Gazetted Officers	400 0 0	
Forest Advances..	4,19,422 9 8				4,29,628 13 5
Objection Book Advances...	1,834 10 0		,, Cheques and Bills—		
Tentage Advances to Gazetted Officers	380 0 0		Departmental Cheques—		
		4,21,637 3 8	Forest Cheques (cancelled)	.....	556 13 2
,, Cheques and Bills—			,, Forest Remittances—		
Departmental Cheques	.....	.....	Remittances to Treasuries...	10,03,055 4 3	
Forest Cheques drawn	.....	7,49,213 15 6	Inter-Divisional Transfers	15,5 9 11 7	
,, Forest Remittances—					10,18,564 15 10
Remittances to Treasuries	17 7 5		,, Cash Recoveries	.....	5,735 6 11
Inter-Divisional Transfers	15,718 14 3		,, Account between Bombay and Marine—		
Inter-Departmental Transfers	751 2 10		IV. Items adjustable by Marine	.....	10,412 0 5
		16,487 8 6	,, Account Between Bombay and Military—Bombay.		
,, Cash Recoveries	.....	5,735 6 11	IV. Items adjustable by Military	.....	496 6 8
,, Accounts between India and Bombay	.....		,, Account between Bombay and Public Works Department (ordinary Branches)—		
Bengal Uncovenanted Service Family Pension Fund	252 1 0		IV. Items adjustable by Public Works Department— Inter-Departmental Charges	.....	6,811 9 1
IV. Items adjustable by India—			,, Account between Bombay and Public Works Department (Railway Branches), Southern Maratha Railway—		
Topographical Survey	26,000 0 0		IV. Items adjustable by Public Works Department... ...	.....	4,30,664 2 6
		26,252 1 0	,, Closing Balance	.....	25 1 5
,, Account between Bombay and Public Works Department (ordinary Branches)—					
IV. Items adjustable by Public Works Department—					
Payments into Treasuries by Civil Officers on account of Public Works Department	.....	112 14 5			
Grand Total ...	.....	26,81,975 11 7	Grand Total ...	.....	26,81,975 11 7

No. $\frac{F.}{129 C.}$

Forwarded to the Conservator of Forests, Southern Circle, under Section 238 of the Forest Code.

Bombay, Accountant General's Office,
10th August 1888.

STEPHEN JACOB,
Accountant General.

FORM No. 60.

FORM No. 60.

FOREST DEPARTMENT, BOMBAY, SOUTHERN CIRCLE.

Revenue received and Outstandings on account of Revenue during 1887-88.

Division.	Particulars.	Outstandings at commencement of year.	Value of Sales and other Revenue during year.	Total.	Amount realized during year.	Balance due to the Department at end of year.	Remarks.
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
Northern Division of Kánara.	*I.—Timber and other produce removed from the forests by Government agency—*						
	a. Timber	71,715 3 3	2,65,810 15 9	3,37,526 3 0	2,52,503 7 8	85,022 11 4	
	b. Firewood and charcoal	575 6 7	28,436 2 11	29,011 9 6	28,061 9 6	950 0 0	
	c. Grass and other minor produce ...	.....	21,025 0 11	21,025 0 11	21,025 0 11	.....	
	II.—Timber and other produce removed from the forests by consumers or purchasers—						
	a. Timber	.....	15,488 12 5	15,488 12 5	15,488 12 5	.....	
	b. Firewood and charcoal	.....	22,662 2 10	22,662 2 10	22,662 2 10	.....	
	c. Bambus	.....	34,802 9 6	34,802 9 6	34,802 9 6	.....	
	d. Grazing and fodder grass... ...	.....	6,284 4 4	6,284 4 4	6,284 4 4	.....	
	e. Other minor produce	.....	2,101 4 2	2,101 4 2	2,055 1 6	46 2 8	
	III.—Confiscated, drift, and waif wood ...	*5,643 8 0	280 14 5	5,924 6 5	5,924 6 5	.....	* Instead of showing Rs. 5,643-8-0 as outstanding the Divisional Officer had wrongly shown Rs. 7,127-8-0 in last year's statement.
	Total Northern Division of Kánara ...	77,934 1 10	3,96,892 3 3	4,74,826 5 1	3,88,807 7 1	86,018 14 0	
Central Division of Kánara.	*I.—Timber and other produce removed from the forests by Government agency—*						
	a. Timber	29,266 15 5	2,40,130 13 9	2,69,397 13 2	2,52,538 6 4	16,859 6 10	
	b. Firewood and charcoal	.....	765 10 0	765 10 0	624 4 0	141 6 0	
	d. Sandalwood	38 4 0	2,404 0 11	2,442 4 11	2,381 8 11	60 12 0	
	e. Grass and other minor produce ...	2,418 9 2	1,721 11 10	4,140 5 0	4,133 0 5	7 4 7	
	II.—Timber and other produce removed from the forests by consumers or purchasers—						
	a. Timber	.....	15,691 13 5	15,691 13 5	15,691 13 5	.....	
	b. Firewood and charcoal	.....	23,087 3 5	23,087 3 5	22,837 3 4	250 0 1	
	c. Bambus	.....	12,859 11 5	12,859 11 5	12,859 11 5	.....	
	d. Grazing and fodder grass... ...	.....	6,729 15 9	6,729 15 9	6,729 15 9	.....	
	e. Other minor produce	.....	7,813 8 6	7,813 8 6	7,787 8 6	26 0 0	
	III.—Confiscated, drift, and waif wood ...	.....	43 6 7	43 6 7	43 6 7	.....	
	Total Central Division of Kánara ...	31,723 12 7	3,11,247 15 7	3,42,971 12 2	3,25,626 14 8	17,344 13 6	

Southern Division of Kánara	*I.—Timber and other produce removed from the forests by Government agency—*						
	a. Timber	21,845 9 11	31,727 14 9	53,573 8 8	40,510 5 8	13,063 3 0	
	d. Sandalwood	.....	8,155 10 8	8,155 10 8	8,155 10 8	.....	
	e. Grass and other minor produce ...	.....	15,568 9 11	15,568 9 11	15,568 9 11	.....	
	II.—Timber and other produce removed from the forests by consumers or purchasers—						
	a. Timber	.....	24,536 3 4	24,536 3 4	24,500 5 8	35 13 8	
	b. Firewood and charcoal	.....	6,231 13 11	6,231 13 11	6,204 6 8	27 7 3	
	c. Bambus	.....	949 0 0	949 0 0	949 0 0	.....	
	d. Grazing and fodder grass ...	.....	8,423 8 0	8,423 8 0	8,423 8 0	.....	
	e. Other minor produce	133 9 4	9,366 3 10	9,499 13 2	9,358 7 10	141 5 4	
	III—Confiscated, drift and waif wood ...	.....	1,277 9 1	1,277 9 1	1,277 9 1	.....	
	Total Southern Division of Kánara ..	21,979 3 3	1,06,236 9 6	1,28,215 12 9	1,14,947 15 6	13,267 13 3	
Belgaum ...	*I.—Timber and other produce removed from the forests by Government agency—*						
	a. Timber	354 4 0	43,464 9 5	43,818 13 5	42,391 13 5	1,427 0 0	
	b. Firewood and charcoal	38 4 0	1,89,138 2 4	1,89,176 6 4	1,89,176 6 4	.....	
	d. Sandalwood	.....	33 6 0	33 6 0	33 6 0	.....	
	e. Grass and other minor produce ...	.....	71,108 4 0	71,108 4 0	71,108 4 0	.....	
	II.—Timber and other produce removed from the forests by consumers or purchasers—						
	a. Timber	.....	1,452 7 6	1,452 7 6	1,452 7 6	.....	
	b. Firewood and charcoal	.....	5,476 0 10	5,476 0 10	5,470 14 10	5 2 0	
	c. Bambus	.....	8,056 4 3	8,056 4 3	8,056 4 3	.....	
	d. Grazing and fodder grass ...	3 0 0	16,224 0 5	16,227 0 5	16,227 0 5	.....	
	e. Other minor produce	.....	5,140 6 4	5,140 6 4	5,140 6 4	.....	
	III.—Confiscated, drift and waif wood ...	.....	40 0 0	40 0 0	40 0 0	.....	
	Total Belgaum ...	395 8 0	3,40,133 9 1	3,40,529 1 1	3,39,096 15 1	1,432 2 0	
Dhárwár ...	*I.—Timber and other produce removed from the forests by Government agency—*						
	a. Timber	31,061 13 6	51,442 4 0	82,504 1 6	69,874 1 6	12,630 0 0	
	b. Firewood and charcoal	.....	9,062 5 0	9,062 5 0	9,052 13 0	9 8 0	
	d. Sandalwood	473 11 0	3,840 1 8	4,313 12 8	4,313 12 8	.....	
	e. Grass and other minor produce ...	.....	83 10 9	83 10 9	83 10 9	.....	
	II.—Timber and other produce removed from the forests by consumers or purchasers—						
	a. Timber	.....	647 8 9	647 8 9	647 8 9	.....	
	b. Firewood and charcoal	.....	554 13 6	554 13 6	554 13 6	.....	
	c. Bambus	.....	5,752 1 5	5,752 1 5	5,752 1 5	.....	
	d. Grazing and fodder grass ...	.....	16,121 5 10	16,121 5 10	16,121 5 10	.....	
	e. Other minor produce	.....	2,417 10 10	2,417 10 10	2,417 10 10	.....	
	III.—Confiscated, drift and waif wood ...	.....	34 9 6	34 9 6	34 9 6	.....	
	Total Dhárwár ...	31,535 8 6	89,956 7 3	1,21,491 15 9	1,08,852 7 9	12,639 8 0	

FORM No. 60—*continued.*

Division.	Particulars.	Outstandings at commencement of year.	Value of Sales and other Revenue during year.	Total.	Amount realized during year.	Balance due to the Department at end of year.	Remarks.
		Rs a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
Bijápur ...	*I.—Timber and other produce removed from the forests by Government agency—*						
	e. Grass and other minor produce ...	.....	5 8 0	5 8 0	5 8 0	.....	
	II.—Timber and other produce removed from the forests by consumers or purchasers—						
	a. Timber	.....	682 8 6	682 8 6	682 8 6	.....	
	b. Firewood and charcoal	.....	10,268 1 3	10,268 1 3	10,268 1 3	.....	
	d. Grazing and fodder grass ...	.....	5,953 12 0	5,953 12 0	5,953 12 0	.....	
	e. Other minor produce	.....	4,580 11 9	4,580 11 9	4,580 11 9	.....	
	III.—Confiscated, drift and waif wood ...	.....	3 7 0	3 7 0	3 7 0	.....	
	Total Bijápur ...	.....	21,494 0 6	21,494 0 6	21,494 0 6	.....	
Kolába ...	*I.—Timber and other produce removed from the forests by Government agency—*						
	a. Timber	.....	14,238 4 5	14,238 4 5	14,238 4 5	.....	
	b. Firewood and charcoal	.....	946 7 6	946 7 6	946 7 6	.....	
	e. Grass and other minor produce ...	.....	7 1 0	7 1 0	7 1 0	.....	
	II.—Timber and other produce removed from the forests by consumers or purchasers—						
	a. Timber	.....	69,503 14 9	69,503 14 9	64,673 14 9	4,830 0 0	
	b. Firewood and charcoal	6,776 14 0	30,355 1 8	37,131 15 8	36,231 15 8	900 0 0	*Last year this item was wrongly addedto the balance out standing against II—*b* by the Divisional Officer.
	d. Grazing and fodder grass ...	*1 15 6	1,472 11 9	1,474 11 3	1,474 11 3	.....	
	e. Other minor produce	.....	822 2 6	822 2 6	822 2 6	.....	
	III.—Confiscated, drift and waif wood ...	.....	992 8 10	992 8 10	992 8 10	.....	
	Total Kolába ...	6,778 13 6	1,18,338 4 5	1,25,117 1 11	1,19,387 1 11	5,730 0 0	

Ratnágiri ...	*I.—Timber and other produce removed from the forests by Government agency—*						
	a. Timber	.....	8,453 8 0	8,453 8 0	8,453 8 0	.....	
	b. Firewood	.....	208 15 0	208 15 0	208 15 0	.....	
	e. Grass and other minor produce ...	.....	42 0 0	42 0 0	42 0 0	.....	
	II.—Timber and other produce removed from the forests by consumers or purchasers—						
	a. Timber	.....	653 11 11	653 11 11	653 11 11	.....	
	b. Firewood and charcoal	.....	111 8 5	111 8 5	111 8 5	.....	
	d. Grazing and fodder grass... ...	.....	312 7 11	312 7 11	312 7 11	.....	
	e. Other minor produce	.....	57 8 2	57 8 2	57 8 2	.....	
	III.—Confiscated, drift and waif wood ...	.....	102 10 7	102 10 7	102 10 7	.....	
	Total Ratnágiri ...	.....	9,942 6 0	9,942 6 0	9,942 6 0	.....	
Total Southern Circle ...	*I.—Timber and other produce removed from the forests by Government agency—*						
	a. Timber	1,54,243 14 1	6,55,268 6 1	8,09,512 4 2	6,80,509 15 0	1,29,002 5 2	
	b. Firewood and charcoal	613 10 7	2,28,557 10 9	2,29,171 5 4	2,28,070 7 4	1,100 14 0	
	c. Bambus	.....	.....	.....	.....	.....	
	d. Sandalwood	511 15 0	14,433 3 3	14,945 2 3	14,884 6 3	60 12 0	
	e. Grass and other minor produce ...	2,418 9 2	1,09,561 14 5	1,11,980 7 7	1,11,973 3 0	7 4 7	
	II.—Timber and other produce removed from the forests by consumers or purchasers—						
	a. Timber	.....	1,28,657 0 7	1,28,657 0 7	1,23,791 2 11	4,865 13 8	
	b. Firewood and charcoal	*6,776 14 0	98,746 13 10	1,05,523 11 10	1,04,341 2 6	1,182 9 4	
	c. Bambus	.....	62,419 10 7	62,419 10 7	62,419 10 7	.....	
	d. Grazing and fodder grass ..	*4 15 6	61,522 2 0	61,527 1 6	61,527 1 6	.....	
	e. Other minor produce	133 9 4	32,299 8 1	32,433 1 5	32,219 9 5	213 8 0	
	III.—Confiscated, drift and waif wood ...	†5643 8 0	2,775 2 0	8,418 10 0	8,418 10 0	.....	
	Grand Total ..	1,7[illegible]346 15 8	13,94,241 7 7	15 64,588 7 3	14,28,155 4 6	1,36,433 2 9	

* For difference between these items and the last year's similar items shown in column "Balance due to the Department at end of year" *vide* remark against 11:—*d.* in Kolába Division.

† For difference *vide* remark against this head under Northern Division of Kánara.

[illegible]

J. L. L. MacGREGOR,
Conservator of Forests, Southern Circle.

FORM No. 61.

FOREST DEPARTMENT, BOMBAY, SOUTHERN CIRCLE.

Outstandings and Liabilities on account of Contractors and Disbursers for 1887-88.

Division.	DEPARTMENT DEBTOR.			DEPARTMENT CREDITOR.			BALANCE DUE.		REMARKS.
	At commencement of year.	Recoveries in cash and value of supplies and work done during year.	At close of year.	At commencement of year.	Payments made during year.	At close of year.	To Department (Outstandings.)	By Department (Liabilities.)	
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
Contractors.									
Belgaum	.....	48,660 9 7	48,660 9 7	.....	55,458 0 8	55,458 0 8	6,797 7 1	.....	
Dhárwár	.....	2,300 0 0	2,300 0 0	200 0 0	2,150 0 0	2,350 0 0	50 0 0	.....	
Northern Division of Kánara ...	.....	50,423 8 4	50,423 8 4	45 8 6	50,671 13 7	50,717 6 1	293 13 9	.....	
Central Division of Kánara ...	.....	9,673 0 0	9,673 0 0	.....	9,673 0 0	9,673 0 0	.....	.....	
Southern Division of Kánara ...	.....	2,250 0 0	2,250 0 0	.....	2,250 0 0	2,250 0 0	.....	.....	
Kolába	.....	1,190 0 0	1,190 0 0	.....	1,190 0 0	1,190 0 0	.....	.....	
Ratnágiri	.....	590 0 0	590 0 0	.....	590 0 0	590 0 0	.....	.....	
Total Contractors ...	.....	1,15,087 1 11	1,15,087 1 11	245 8 6	1,21,982 14 3	1,22,228 6 9	7,141 4 10	.....	
Disbursers.									
Belgaum	.....	61,680 3 4	61,680 3 4	1,761 11 8	61,752 3 7	63,513 15 3	1,833 11 11	.....	
Bijápur	.....	9,205 15 2	9,205 15 2	47 0 3	9,204 3 8	9,251 3 11	45 4 9	.....	
Dhárwár	.....	19,820 15 11	19,820 15 11	.....	19,820 15 11	19,820 15 11	.....	.....	
Northern Division of Kánara ...	.....	64,379 5 11	64,379 5 11	13 9 4	64,369 0 4	64,382 9 8	3 3 9	.....	
Central Division of Kánara ...	.....	68,835 6 0	68,835 6 0	948 10 7	69,002 8 11	69,951 3 6	1,115 13 6	.....	
Southern Division of Kánara ...	.....	44,425 10 8	44,425 10 8	2,672 4 10	45,329 13 6	48,002 2 4	3,576 7 8	.....	
Kolába	.....	33,320 0 4	33,320 0 4	239 13 7	33,084 13 9	33,324 11 4	4 11 0	.....	
Ratnágiri	.....	2,667 14 5	2,667 14 5	179 3 9	2,500 3 6	2,679 7 3	11 8 10	.....	
Total Disbursers ...	.....	3,04,335 7 9	3,04,335 7 9	5,862 6 0	3,05,063 15 2	3,10,926 5 2	6,590 13 5	.....	
Grand Total ...	.....	4,19,422 9 8	4,19,422 9 8	6,107 14 6	4,27,046 13 5	4,33,154 11 11	13,732 2 3	.....	

No. F./12640.

Forwarded to the Conservator of Forests, Southern Circle, with reference to para. 238 of the Forest Department Code.

Office of the Accountant General,
Bombay, 8th August 1888.

STEPHEN JACOB,
Accountant General.

ANNUAL FORM No. 62.

Forest Department, Bombay, Southern Circle.

Financial results of the year 1887-88.

Division.	Timber and other produce removed from the Forests by Government agency.		Other Revenue.		Formation, protection and improvement of Forests.	Total.		Remarks.
	Receipts.	Charges.	Receipts.	Charges.	Charges.	Receipts.	Charges.	
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
Direction	...	...	64	25,102	...	64	25,102	
Northern Division of Kánara.	3,07,514	1,63,404	81,597	6,725	31,641	3,89,111	2,01,770	
Central do. do. ...	2,59,677	1,17,956	66,883	8,485	12,232	3,26,560	1,38,673	
Southern do. do. ...	64,270	33,314	51,098	14,863	9,264	1,15,368	57,441	
Belgaum	3,02,710	1,51,686	37,137	15,299	15,072	3,39,847	1,82,057	
Dhárwár	83,324	27,079	25,947	11,968	10,716	1,09,271	49,763	
Bijápur	5	1	22,187	11,304	7,432	22,192	18,737	
Kolába	15,192	17,819	1,06,733	17,280	17,458	1,21,925	52,557	
Ratnágiri	8,755	8,832	1,556	1,767	9,560	10,311	20,159	
Total ...	10,41,447	5,20,091	3,93,202	1,12,793	1,13,375	14,34,649	7,46,253	

J. L. L. MacGREGOR,
Conservator of Forests, Southern Circle.

Conservator's Office, Southern Circle:
Dated Belgaum, 19th October 1888.

* 631—15-8-88

No. 3711 of 1888.

Revenue Department.

Camp Jog Falls, 20th December 1888.

MEMORANDUM.

The accompanying report on the forest administration of the Southern Circle for the year 1887-88 is submitted to Government with the following remarks.

2. Paragraph 2.—The information called for by Government on the Conservator's letter No. 5498 of 24th March last, in memorandum No. 2306, dated 16th April following, was supplied in this office No. 3188 of 16th October last, but the final orders of Government have not yet been passed. It would, however, appear from Government Resolution No. 35P., dated 12th September last, that the alternative line proposed by Mr. MacGregor has not met with the approval of Government.

3. Paragraph 5.—The table in this paragraph is not according to the form prescribed by the Government of India and referred to in paragraph 2 of Government Resolution No. 8738, dated 24th December 1887, as regards the settlement of areas notified under Section 34 of the Forest Act. The information required for 1886-87 by that paragraph was, however, supplied separately as will be seen from paragraph 5 of the Government Resolution No. 2232, dated 12th April last, reviewing that year's report.

4. Paragraph 10.—The forest settlement reports of the Pen, Nágothna and Roha sub-divisions were submitted to Government with this office No. 121A, dated 12th January last. Decisions upon them are still awaited.

Paragraph 12.—Mr. Tucker's reports on the forest settlements in the Bádámi, Hungund and Bágalkot tálukas of the Bijápur District, in which the free grazing question is involved, will be laid before Government shortly. There are peculiar difficulties connected with their disposal.

5. Paragraph 15.—The Commissioner has already recorded his opinion on the poor results attending the forest demarcation and settlement work in the Ratnágiri District in his letters quoted in the preamble of Government Resolution No. 3418 of 29th May last. He refrains from making any further observations beyond stating that the Collector's report on the subject of the strength of the establishment required for the protection of forests, called for in paragraph 6 of that Resolution, was submitted to Government with this office No. 3315 of 27th October last.

6. The Commissioner, S. D., does not feel competent to express any detailed opinion as regards the criticisms of the Conservator on the work of the survey party; but on the whole considering that in the cases of the extensive forest tracts of Kánara, which always have been and always will be forest, the demarcation of the village boundaries is unnecessary and useless.

7. Paragraphs 20 to 30.—The progress made in the preparation of working plans appears to be satisfactory, except in the Kánara District, where owing to illness caused by the unhealthiness of the tracts traversed, the working party could not accomplish much work.

8. The Conservator of Forests is the best judge of the results to be expected from the adoption of the method proposed by him for determining the yield of the Kánara Forests.

9. Paragraphs 31 and 32.—Although fewer prosecutions for forest offences were instituted than during the last year, the percentage of failures was higher. This would seem to indicate that the forest officers were not so careful as they should have been in bringing good cases only into Court.

10. Paragraph 33.—The Conservator's suggestion that the Rangers should be allowed to take their cases at once into Court without first obtaining the

permission of the Divisional Forest Officer does not commend itself to the Commissioner. In fact in order to prevent these lowly paid subordinates causing vexatious annoyance to the people by groundless prosecutions, the existing rule that no prosecutions should be instituted without the approval of the District Forest Officer was enforced by the late Conservator of Forests. This rule was upheld by Government and ordered to be introduced into the Northern Circle.

Vide paragraph 9 of Government Resolution No. 658 of 25th January 1883 and paragraph 9 of No. 8810 of 30th November 1883.

11. Paragraph 39.—The suggestion of the Conservator to charge the villagers concerned a double grazing fee for cattle when undetected forest fires occur is not approved by the Commissioner, S. D. If it can be shown that villagers themselves wilfully set fire to the forest as alleged, they should by all means be prosecuted and punished; but it cannot be said that in all cases villagers are the cause of forest fires. The Commissioner is well aware of the great difficulty the Forest Department has to contend with in this respect, but he cannot support the sweeping penalty proposed.

12. In their Resolution No. 6762, dated 10th October last, Government requested the Conservator to give in his report of 1887-88 a clear and detailed account of forest fires and of the measures taken to prevent them. As the report is dated 19th October, it is evident that the instructions of Government did not reach him in time to admit of his giving the required information in greater detail in the present report.

13. Paragraph 46.—Planting and sowing operations have not been attended with marked success. The Divi Divi tree, on the propagation of which so much stress was laid in previous reports, appears to have failed in the Central Division of Kánara, probably owing to the conditions of soil and climate not being favourable to its growth in that locality. The Conservator would prefer broad-cast sowings in open scrub jungles and protecting existing jungles to spending money on new plantations.

14. Paragraph 69.—It would of course be satisfactory were the Southern Marátha Railway Company to agree to take a certain quantity of wood during the next few years, but the Commissioner can quite understand the unwillingness of the Company's officers to do so, when it is just possible that circumstances *may* arise rendering the use of coal more convenient than wood.

15. Paragraphs 83 to 89.—The receipts at the Saw Mills fell off by Rs. 44,542 owing to fewer indents from the Railway Company. The charges were slightly lower than in the previous year. The percentage in wastage was unusually heavy owing to the small size of the timber supplied to the Mills. The Commissioner concurs with the Conservator in considering that the working of the Mills should be inquired into before incurring any expenditure on account of a new boiler. As the Railway Company is said to have set up its own saw-machinery, it may not be worth while to maintain the Kannigiri Mills.

16. Paragraphs 90 to 104.—The financial results are on the whole satisfactory, notwithstanding (1) a decrease in the sale of timber to the Railway Company, (2) a less yield from teak in Kolába, and (3) the collapse of the Kodibag timber sales owing to a combination among dealers. The proposal to hold these sales in future in November, instead of as heretofore in March, appears to be a good one.

The expenditure has exceeded the last year's charges by Rs. 51,646, the principal causes of the increase being due to departmental fuel cuttings and to topographical survey.

17. Paragraph 115.—The Commissioner, S. D., is in favour of the retention of Protected Forests in Kánara, for the reasons set forth in his report forwarding to Government the results of the *Yellapur* and Ankola Forest Settlements.

18. Paragraphs 116 to 120.—The Conservator disapproves of the present procedure attending the free grants of wood to the poorer classes, and recommends a reversion to the system, probably that in force before the issue of Government Resolution No. 335 of 31st January 1880, in which Government

reserved to themselves the power of sanctioning such grants. Government have since delegated this power to the Divisional Commissioners to the extent of making free grants of timber of the value of Rs. 50 in individual cases for certain specified objects. The Commissioner sees no sufficient reason for a modification of the rules so recently laid down. If the Conservator has noticed instances, as remarked in paragraph 117, of persons getting gratis timber to which they were not entitled under the rules in force, he should immediately have brought the fact to the notice of the Commissioner.

Government Resolution No. 1051, dated 15th February 1887.

19. Paragraph 121.—The Conservator also protests against the present system of meeting the requirements of the people in fuel and small wood in Kánara. It need not, however, be pointed out that liberal treatment in respect of the domestic wants of the poor people inhabiting forest villages has always been considered necessary as an incentive to enlisting their co-operation in forest conservancy. To deprive them now of the privileges, which they have enjoyed for so many years past, would cause considerable discontent, and this result would scarcely be counterbalanced by the small profit accruing to the Forest Department by the adoption of the Conservator's suggestion. The Commissioner is, however, sending a copy of the Conservator's remarks to the Collector for a special report, which will be duly submitted to Government.

20. Paragraph 124.—The diminution of large game is unfortunately not peculiar to Kánara. It is much to be deplored, and the Commissioner, S. D., would be glad to see a close season introduced, but there are difficulties in the way, at any rate previous efforts in this direction have failed.

21. The Commissioner might add many remarks regarding the wholesale selection of worthless tracts as forest in portions of the Southern Division and in the views held by Mr. Propert, Colonel Peyton, late Conservator of the Southern Circle, to a great extent concurs. The question, however, is of a controversial nature, and as such should not, according to the views of Government, be introduced into an administration report.

W. H. PROPERT,
Commissioner, S. D.

SIND CIRCLE.

No. 757 of 1888-89.

From

THE CONSERVATOR OF FORESTS,

SIND CIRCLE.

To

THE SECRETARY TO GOVERNMENT,

REVENUE DEPARTMENT.

Conservator's Office,

Hyderabad, 10th September 1888.

Sir,

I have the honor to forward herewith the Forest Administration Report of the Sind Circle for the year 1887-88 with its subsidiary Statements.

I have the honor to be,

Sir,

Your most obedient Servant,

J. G. MacRae, Colonel,

Conservator of Forests, Sind Circle.

(Through the Commissioner in Sind.)

ANNUAL ADMINISTRATION REPORT OF THE SIND FOREST DEPARTMENT FOR THE YEAR 1887-88.

Introduction.

1. An area of 131,322 acres was added to the Sind Circle during the year.

2. The office of the Forest Settlement Officer in Sind was broken up on the 14 May 1887, and the forest demarcation and settlement in Sind is practically settled.

3. The Jacobabad Division was abolished under the orders of Government contained in their Resolution No. 441 of 7th February 1887.

4. Forest fires have been unimportant.

5. The forests have been very little worked owing to falling off in the demand for fuel by the North-Western Railway; the stock still in hand from the indent for 127,900 cubic feet, estimated consumption up to end of December 1887, being said to be sufficient to last them till June 1889.

6. An application has been received for a monopoly of the right to purchase babul bark from the Sind forests, for the next ten years, with a view to exporting it to Europe, and introducing it as a tanning agent.

7. The Conservator extended his tour into the Nara Valley in the Thar and Parkar Districts with a view to ascertaining the capabilities of the district to supply a railway line with wood fuel should one be constructed through that district.

8. The financial results are satisfactory, the net revenue being only Rs. 1,904 short of that of last year, which was the highest on record.

CHAPTER I.

Area and Boundaries

9. The area of the Sind forests as it stood on 31st March 1887, and additions thereto, and deductions therefrom, during the year under report are given in the following table:—

Area as it stood on 31st March 1887.				Area added during the year or gained by action of the river.				Area excluded during the year or lost by action of the river.				Area as it stood on 31st March 1888.			
Reserved.		Protected.		Reserved.		Protected.		Reserved.		Protected.		Reserved.		Protected.	
Sqr. Miles.	Acres.	Sqr. Miles.	Acres.	Sqr. Miles.	Acres.	Sqr. Miles.	Acres.	Sqr. Miles.	Acres.	Sqr. Miles.	Acres.	Sqr. Miles.	Acres.	Sqr. Miles.	Acres.
699	409	...	...	205	122	1	128	11	381	...	...	893	150	1	128

The losses in forest land by the action of the river have again been serious in Upper and Central Sind. In the Sukkur Division an area of 1,151 acres was lost, of this 1,150 acres was good land. Int he Naushahro Division the loss amounted to 5,080 acres, consisting almost entirely of promising "kachas (alluvial) lands."

The losses in Lower Sind were unimportant, 50 acres of alluvial land in Hyderabad and 60 in the Jerruck Division. The alluvial accretions thrown up in the frontages of forests are reported as follows:—

Sukkur Division	5,400	acres
Naushahro Division	510	,,
Hyderabad Division	1,470	,,
Jerruck Division	350	,,

10. The right of the Forest Department to a large area of the fresh deposit of land in the Sukkur Division is disputed by the Revenue Department, and it remains to be seen how much will finally be adjudged to belong to forests.

11. Material to the value of Rs. 6,197 was saved from eroding banks. Of this Rs. 3,943 worth has been disposed of; the balance remained in stock at the end of the year. The expenditure in keeping eroding banks clear of timber amounted to Rs. 1,304.

12. The following table shows the areas that have been notified under Section 19 of the Forest Act during the year under report:—

Name of Forest.	Taluka.	Area in Acres.
Ghangharko	Labdarya.	5,849
Budodero		1,555
Soi		5,108
Gajidero		4,333
Lakhi	Sukkur.	3,614
Garhi Halim		2,096
Kadrapur		79
Jamshero	Sukkur.	57
Sarhad		3,529
Jehanpur		4,340
Sultanpur		1,753
Salehani		5,014
Adilpur		11,251
Walu Maher		2,648
Samowah		2,252
Syedpur	Rohri.	569
Rohri		14,249
Mirpur	Mirpur.	740
Islam		2,064
Adilpur		1,423
Wasir		1,417
Jarwar		2,839
Mohro Mari	Shikarpur.	11,857
Kote Sultan		17,342
Muso	Labdarya.	5,930
Amroti		11,684
	Total ...	1,23,592

13. The lands that have been selected for reservation but not yet finally notified are given below:—

Name of Forest.	Taluka.	Area in Acres.	Year in which originally notified.
Ali Ganj	Tatta.	431·20	1884.
Hilaya		849·18	
Shah Lanko		312·10	
Tatta		12,388·30	
Ghorko		933·23	
Chhachh		3,361·27	
Ghari Yasin	Naushahro Abro.	26,891·13	1886.
Khairwah	Jacobabad.	56·30	1886.
Gokalpur		64·30	
Mirpur	Thul.	2,309·39	1886.
Mehrabpur		4,817·37	
Bakhtawarpur		6,059·38	
Jagan		2,316·15	
Tarai	Nausharo Abro.	2,349· 5	1887.
Chango Rahuja		1,749·35	
Choi		3,132·20	
Adamji		4,352·52	
Phohyari		473· 4	
Masti Khan		225· 0	
Katchbo Alibhar	Sujawal.	3,000· 0	1887.
Do. Surjani		3,410· 0	
Do. Keti Saidino		2,500· 0	
Nurketi	Hala.	643· 5	1887.
Drago	Ghotki.	2· 5	1887.
		82,631· 29	

14. The establishment of the Forest Settlement Officer in Sind was broken up on the 14th May 1887, and nothing remains now for the completion of the forest settlement in Sind but the final orders of Government on the lands that have not yet been notified under Section 19 given in the table above, and forest demarcation and settlement in the Kashmor Taluka, Upper Sind Frontier Districts, which has been deferred till the introduction of the Revenue Survey and Settlement in that taluka.

15. The expenditure on forest demarcation and settlement during the year under report amounted to Rs. 620-0-0, this includes the pay of Establishments and all other charges.

CHAPTER II.

Surveys, working plans, and annual plans of operations.

16. The large scale survey of the forests under departmental supervision has been continued. Only one surveyor was available till 4th November 1887, when the surveyor, whose services had been placed at the disposal of the

Forest Settlement Officer, rejoined. He was appointed to undertake the survey of the Bhorti Forest, which has been so altered in shape by the action of the river as to render the old map quite useless. I was able to see the surveyor begin his work and supervise it for a few days while my camp was in the forest. This man is very intelligent and quick. He has completed the survey of the forest (7,500 acres.), and the map will leave nothing to be desired, as it will show every detail of tree growth, nature of soil, and water-supply. The other surveyor who was employed throughout the season in the Jerruck Division completed the survey of the following forests:—

Mulchand	5,454 Acres.
Haderani	5,511 ,,
Sonda	2,114 ,,

17. As regards working-plans no change has been made in the system of working the forests. The work of cutting them up into squares of half mile sides has been continued and is approaching completion. 158 miles of sides were cut during the year under report.

18. The experimental plan in the Laikpur Forest, noticed in para. 14 of last year's report, has been interferred with by the want of demand for locomotive fuel by the railway. No fresh fellings were carried out, but the two compartments that had been first cleared have been fenced in by the zamindar and are closed for reproduction. He continues to cultivate in two other compartments which will be closed when a demand for locomotive fuel at Kotri permits of one or two more compartments being cleared.

19. The boundary paths, 20 feet wide, of the following new Reserves were cut and marked with earth cairnes.

(1) Gajidero	(10) Doabo	(19) Wasir
(2) Soi	(11) Samowah	(20) Rohri
(3) Bahman	(12) Walu Maher	(21) Syedpur
(4) Nazardeto	(13) Sarhad	(22) Kadrapur
(5) Phati Bilawal	(14) Salehani	(23) Lakhi
(6) Dosu	(15) Sultanpur	(24) Ghari Halim
(7) Kondi	(16) Jarwar	(25) Mohro Mari
(8) Bagban	(17) Mirpur	(26) Budodero
(9) Pipri	(18) Islam	(27) Noabad

CHAPTER III.

Protection and Improvement.

Section I.—Establishments.

20. On the 1st of April the Jacobabad Division was abolished and the five Ranges of which it consisted were distributed as under:—

Jacobabad, Thul, Kashmor, and Shikarpur Ranges were given to the Sukkur Division, and the Naushahro Abro Range to the Naushahro Division.

21. The Divisional Forest Officer, Mr. Assudamal, Acting Sub. Assistant Conservator of Forests, was attached to the Hyderabad Division pending the orders of Government as to the final disposal of his services. On the receipt of the gradation list of forest officers, on 17th May, it was found that Mr. Assudamal had been displaced from the list of acting Sub. Assistants owing to

the return to duty of a Deputy Conservator of Forests to the Northern Circle, he was thereon directed to rejoin his substantive appointment in the Judicial Department.

22. Mr. Dasai, Deputy Conservator of Forests, took furlough on 5th October 1887 and left Sind, making over charge of his Division to Mr. Showkirami, Sub. Assistant Conservator, Mr. Tuljaram, Sub-Assistant Conservator, being placed temporarily in charge of the Sukkur Division.

23. Mr. G.M. Ryan was transferred to Sind from the Southern Circle and assumed charge of the Sukkur Division from Mr. Tuljaram on 12th October 1887; the latter officer remained attached to the Sukkur Division.

24. On 14th November 1887 Mr. Stewart was transferred to Sind. He was placed in charge of the Jerruck Division, but on 8th December 1887 a transfer of appointments was made between him and Mr. Ryan.

Section II.—General protection and breaches of Forest law.

25. The general protection of the forests was good and the conduct of the protective Establishment satisfactory.

26. The following table gives the number of cases of forest offences tried before Magistrates during the past and previous year.

Name of Division.	Number of cases tried before Magistrates.		Number of Convictions.	
	1886-87.	1887-88.	1886-87.	1887-88.
Sukkur	38	102	25	62
Naushahro	4	11	9	7
Hyderabad	15	11	12	7
Jerruck	1	6	1	2
	58	130	47	78

The proportion of convictions to cases tried is still very low, but there were no complaints of overzeal on the part of forest subordinates and the failure to get convictions must be due to cases that have already been cited in last year's report. No special reason can be given for the increase in the number of cases tried.

27. The number of petty offences compounded under Section 67 of the Indian Forests Act are given below for two years.

Division.	Illicit grazing.		Theft.		Other offences.		Compensation.	
	1886-87.	1887-88.	1886-87.	1887-88.	1886-87.	1887-88.	1886-87.	1887-88.
							Rs.	Rs.
Sukkur	305	498	70	127	16	17	3,352	3,159
Naushahro	...	32	16	20	...	...	35	82
Hyderabad	357	233	5	48	2	...	281	307
Jerruck	282	428	6	42	3	2	338	793
Total.	944	1,191	97	237	21	19	4,006	4,341

The increase is chiefly in cases of illicit grazing in the Sukkur and Jerruck Divisions, and is probably due to want of fodder outside forest limits owing to failure of rain during the hot weather. There were no serious cases either of theft or assault reported.

Section III.—Fires.

28. The forest fires during the year under report have been of no great extent, comparatively, and no great damage has been done.

29. The table given below shows the number of fires and the area burnt

Division.	Number of fires.		Area burnt, in Acres.	
	1886-87.	1887-88.	1886-87.	1887-88.
Sukkur	86	58	11,119	1,843
Naushahro	9	12	882	1,178
Hyderabad	12	11	579	301
Jerruck	12	13	153	250
	119	94	12,733	3,572

The decrease, I am afraid, cannot be claimed as due to better care or greater vigilance any more than the extensive fires of last year can be attributed to gross carelessness and neglect. The natural conditions were not provocation of fires, and the people had not the same inducement to set fire to the reeds as they had last year. Three men were apprehended on charges of setting fire to the forests. Two were acquitted for want of sufficient evidence, one was convicted and let off with a fine. Considering how difficult it is to catch a man in the act of setting fire to a forest, and the impossibility almost of getting a conviction on the only evidence as a rule forthcoming, *viz.*, that of the forest guard who catches him, a small fine is altogether an insufficient punishment.

30. The usual table showing the area protected, &c., is given below.

Division.	Total Forest Area.		Area Protected.		Area of Failures.		Expenditure incurred.
	Sqr. Miles.	Acres.	Sqr. Miles.	Acres.	Sqr. Miles.	Acres.	Rs. a. p.
Sukkur	425	439	422	516	2	563	23 0 0
Naushahro	186	469	184	571	1	538	...
Hyderabad	172	73	171	412	...	301	...
Jerruck	108	449	108	199	...	250	...
Total ...	893	150	887	418	5	372	23

Section IV.—Grazing.

31. The revised scale of grazing fees introduced the year before has not resulted in loss of revenue in the year under report, which exceeds that of the previous year, the figures being Rs. 52,989 for 1887-88 against Rs. 45,867 for 1886-87. This increase is due in a great measure also to want of fodder outside forest limits, which brought a larger number of cattle into the forests than usual.

32. The number of cattle permitted to graze free during the year was as under.—

Buffaloes	885
Horned Cattle	3,635
Horses and Donkies	21

Section V.—Natural Reproduction.

33. In the Sukkur Division an area of 3,680 acres that had been worked for locomotive fuel was closed for reproduction.

34. An area of 10,000 acres under reproduction in the Sukkur District was irrigated from the river. The reserved land in the Jacobabad District lies within protective bunds, and cannot get water except from canals under the control of the Irrigation Department. The Forest Department cannot afford to pay the ordinary rates for the use of water from the canals, and officers of the Irrigation Department have so far declined to permit the forests being watered gratis with surplus water—that is, water taken from the canals in the early and very late stages of the inundation before the kharif operations begin and after they are over, when water is not required for the crops. But with a change in the *personnel* of the Head of the Irrigation Department which has lately taken place, and the interest evinced in the matter by the Deputy Commissioner, Upper Sind Frontier District, arrangements will be made to irrigate the forests in the neighbourhood of Jacobabad with surplus water.

35. Reproduction in the Shikarpur District is slow and not very satisfactory over the greater part of the reserved area for want of water. The Reserves are difficult to irrigate, and it has not yet been found possible to find funds for the necessary canals and sluices.

In some parts the forests get a little water from the water wasting from zamindari canals.

36. In the Naushahro Division 1,356 acres were closed for reproduction and results are satisfactory. 725 acres of former closures were opened again to grazing the new growth not requiring further protection.

37. In the Hyderabad Division an area of 1,280 acres was closed for reproduction, and an area of 12,121 acres, which had been closed in previous years, was opened to cattle again, the young growth having attained sufficient height and strength to be safe from cattle.

38. In the Jerruck Division an area of 250 acres was closed. This Division was hardly worked at all for locomotive fuel and local demand is met from dead wood. The forests are fully stocked.

Section VI.—Artificial Reproduction.

39. Operations under this head are unimportant and hardly necessary.

Nothing was done in the Sukkur Division beyond sowing a few maunds of babul seed and putting in 350 Tali cuttings. Both, the seedlings from the seed sown, and the cuttings, suffered from frost to some extent.

40. In the rest of the Circle no new works were taken in hand ; the old gardens and plantations were kept up. The Divi-Divi plantation in the Hyderabad Division, which had been destroyed by rats last year, was planted with mango trees, which will do very well. The land, 7½ acres, is good, and is situated on the banks of the old bed of the Fuleli. Water flows in this during the inundation season, but it is dry during the rest of the year ; water is, however, obtainable by digging pits in the sandy bottom. A frame work made after a design of my own from outside slabs of trees cut for sleepers was sunk in the sand in the bed of the Fuleli in February 1884; this is cleared out yearly and used as a kacha well and supplies an abundant quantity of water.

Section VII.—Experiments.

41. No experiments in exotics were made ; but the land in the Divi-Divi plantation, which had been planted with mango trees in the usual way at long distances apart, was practically available for other crops, and I accepted a suggestion of the Forest Ranger, Miani, Munshi Pribdas , to let the land out for a cotton crop on the following arrangements : The Forest Department to give the land free of assessment and supply the water ; the cultivator to find all the field labour for ploughing, sowing, weeding, &c. ; the crop to be divided in equal shares between the Forest Department and the cultivator. The area, 7½ acres, was put under cotton, but the small ridges which divided the fields into small plots for convenience of irrigation and the edges of the irrigation channels were sown with tir, oil-seed (*Sesamum Indicum*), and some vegetables. The results are as follows and will be found interesting.

The oil-seed and vegetables sold for	Rs.	103	10	8
The first picking of cotton, 50 mds., at Rs. 5-0-6 per md...	„	251	9	0
The second picking of cotton 93 mds. at Rs. 5-14-0 per md.	„	546	6	0
Total...		901	9	8
Half-share received by the department.....	Rs.	450	12	10.

There was no extra cost to the department in raising this crop, as the camels for the Persian wheel were already working in the plantation to water the mango trees, and there was a man of the temporary establishment who had charge of them and drove them ; but if it is necessary to show expenditure, it is as follows for the two months that the cotton crop was watered :—

2 camels at Rs. 15 each per month, for two months.....	Rs.	60	0	0
1 man at Rs. 7 per month for two months	Rs.	14	0	0
		74	0	0

Deduct this from Rs. 450-12-10, it leaves Rs. 376-12-10, or Rs. 50-3-10 per acre of clear profit.

Of course results of this kind could never have been attained if the interests of the department had not been jealously guarded, and great credit is due to Forest Ranger Munshi Pribdas for the care he took to ensure the full share that the Department was entitled to being realized.

42. There being a prospect of a large demand for babul bark coming into existence, two experimental fellings were made with a view to ascertaining the yield of bark per acre and the proportion of wood to bark.

The first experiment with five acres was unsatisfactory as no separate account was kept of the yield in firewood ; the stripping must have been very badly done, as the yield per acre was very disappointing. The work was done by daily wages and was very costly. The bark, 226½ maunds, was made over to a person in Karachi, who paid all working charges and exported the bark as a sample consignment with a view to introducing babul bark as a tanning agent into the European market.

The second experiment with two acres gave the following result :—

Bark..... 225 maunds.
Firewood.....3,037 cubic feet.
Timber.....61 small logs.

The cost of felling the trees, stripping and drying the bark, cutting the firewood into billets and stacking it, and trimming the logs, came to Rs. 123-10-0.

The whole of the material was made over on the spot to the contractor who had carried out the experiment at his own expense on his paying the usual royalty on the material as under :—

225 maunds of bark at Rs. 10 per 100 maunds... Rs.	22	8	0
Firewood, 3,037 c. ft. at Rs. 10-0-0 per 1,000 c. ft... „	30	6	0
Logs, 61 at annas 8 each ..... „	30	8	0

Section 8.—Communication and Buildings.

43. No new buildings were erected or roads cut. A sluice was built by the Irrigation Department to water the Huderani Forest in the Jerruck Division, the cost of which, Rs. 905, has been debited to the Forest Department, but the work had not been taken over up to 31st March 1888.

CHAPTER IV.

Yield and Working.

Section I.—Departmental Operations.

44. The detail of the working of the depôts is given below :—

Name of Depôt.	Stock on hand on 1st April 1887.			Added during the year 1887-88.			Disposed of during the year 1887-88.			Balance on 31st March 1888.		
	Timber.	Posts and Rafters.	Fuel.	Timber.	Posts and Rafters.	Fuel.	Timber.	Posts and Rafters.	Fuel.	Timber.	Posts and Rafters.	Fuel.
	C. ft.	No.	Mds.	C. ft.	No.	Mds.	C. ft.	No.	Pounds.	C. ft.	No.	Mds.
Shikarpur	...	...	...	1,460	16,942	...	1,460	16,942	...	...	...	...
Sukkur	3,987	16,614	2,395	9,961	48,418	7,285	5,326	56,798	8,909	8,622	8,234	771
Rohri	721	6,138	...	1,058	9.515	...	823	10,733	...	956	4,920	...
Larkana	438	1,001	7,197	...	2,200	...	438	1,301	3,888	...	1,900	3,309
Sehwan	...	111	...	...	24,385	...	...	10,501	...	...	13,995	...
Karachi	1,743	...	...	...	...	...	1,743	...	...	...	...	...
Tatta	337	1,722	...	157	...	...	265	82	...	229	1,640	...
Keti Bandar	15	...	188	8,514	...	281	8,529	...	313	...	...	156
Kotri	824	...	10,162	3,330	108	148,754	3,243	28	125,637	911	80	33,279
Hyderabad	691	70,120	18,492	6,478	125,122	88,325	1,235	150,503	66,762	5,934	44,739	40,055
Total.....	8,756	95,706	38,434	30,958	226,690	244,645	23,062	246,888	205,509	16,652	75,508	77,570

45. The following statement shows the quantity of timber and fuel sold at each of the depôts during the year under report and the previous year :—

Name of Depot.	Timber, c. ft.		Post and Rafters, Number.		Fuel, Maunds.	
	1886-87.	1887-88.	1886-87.	1887-88.	1886-87.	1887-88.
Shikarpur	25	1,460	19,075	16,942	40	...
Sukkur	5,592	5,326	24,021	56,798	6,112	8,909
Rohri	1,050	823	9,172	10,733	..	...
Larkana	204	438	1,103	1,301	2,803	3,888
Sehwan	53	...	9,594	10,501	...	...
Karachi	372	1,743	73	...	1,589	...
Tatta	24	265	420	82	...	...
Keti Bandar	8,262	8,529	...	...	7,708	313
Kotri	3,620	3,243	...	28	106,521	125,637
Hyderabad	13,187	1,235	1,09,919	150,503	53,561	66,762
Total	32,389	23,062	173,377	246,888	178,334	205,509

46. The depôts have been worked as heretofore; the Hyderabad Depôt on the share system and the rest departmentally.

47. In the Sukkur Division there is a marked increase as compared with the sales in 1886-87; in the Shikarpur Depôt, of timber and of posts, and rafters in the Sukkur Division, due to the excellent arrangements made by Mr. Showkiram the Divisional Forest Officer.

48. There is nothing particular to notice in the Naushahro Division. The aggregate sales are rather better than last year.

49. In the Hyderabad Division there is a great falling off under timber in the Hyderabad Depôt; this is due to two causes (1) the sales of timber the year before had been abnormally large, so that the market was glutted; (2) the large sales had very nearly cleared the depôt of timber, and the fresh timber which might have tempted buyers did not begin to arrive in the depôt till January, owing to the faulty arrangements of the share-contractor for the year. On the other hand there is a large increase amounting to nearly fifty per cent. under posts and rafters, there being a very good demand for this kind of timber. The sales of firewood, both at the Hyderabad and Kotri Depôts, are better than last year owing to greater demand. The demand for wood from forest depôts varies with the quantity of wood in the market cut on jagir land and private holdings. In the Jerruck Division the old stock at the Karachi Depôt, which has been abolished, was sold off, which gives an increase in the guantity shown as "disposed of" as compared with the sales of the previous year.

50. Firewood is no longer sent for sale to the Keti Bandar Depôt, hence the small quantity sold during the year, which was from old stock.

51. The Tatta Depôt was found not to pay and was abolished on 2nd November 1887.

52. The sale of the share-contract of the Hyderabad Depôt, yearly, was found very inconvenient, as it left in stock timber belonging to several co-sharers, about the disposal of which there was much difficulty. The share-contract was therefore sold for three years. The Government share is as under, which compares favourably with the average of the last two years—

Babul timber	Annas	9	pies 0	in each Rupee of gross receipts.
Bahan logs, dasas, posts and rafters	,,	10	6	do.
Jhau posts and rafters	,,	5	6	do.
Kirrir rafters	,,	4	6	do.
Firewood	,,	5	9	do.
Charcoal	,,	7	0	do.

53. The following statement gives the quantity of timber supplied to the State Railway and other Government Departments.

Name of Department.	Babul logs.	Babul sleepers.	Babul bolsters.
	No.	No.	No.
North-Western Railway	37	1,285	899
Karachi Harbour Works.....	...	3,726	...
Gun Carriage Factory, Bombay.....	355	...	...

The timber was supplied on indent and there is nothing particular to notice.

54. A statement showing the quantity of timber cut departmentally and disposed of in the forests is given below :—

Division.	Timber.	Babul posts.	Jhau posts.	Bahan posts.	Bahan rafters.	Kirrir rafters.	Jhau posts.	Babul sleepers.
	C. ft.	No.	No.	No.	No.	No.	No.	No.
Sukkur	418	...	...	...	191	...	...	...
Naushahro...	88	2	...	475	30,100	963	5,965	...
Hyderabad ..	1,919	...	...	...	...	...	...	2,701
Jerruck	805	20	150	...	...	...	...	...
Total ...	3,230	22	150	475	30,291	963	5,965	2,701

55. A statement of firewood supplied to the State Railway and other departments and public bodies will be found below :—

To whom supplied.	Firewood in Maunds.	
	1886-87.	1887-88.
North-Western Railway	1,940,425	1,543,278
Commissioner's Steamer	13,281	.....
Indus Ferry Steamers	211,738	102,437
River Conservancy Department.....	6,583	7,124
Public Works Department	125	.....
Karachi Harbour Works.....	54,221	45,514
Commissariat Department	28,077	26,582
Hyderabad Water-works	42,500	52,000
Sukkur Municipality	1,800	1,550
Hyderabad Jail	2,578	2,344
Government Farm, Hyderabad	6,500	13,000
Manager, Incumbered Estates	.....	3,000
Total.....	2,307,828	1,796,829

56. There is a large falling off in consumption of the railway owing to decrease of traffic on the line: this has also affected the consumption of the ferry steamers on the Indus at Sukkur.

57. The harbour works took less than they did the year previous, but the loss there was made up for by the larger quantity taken by the Hyderabad Water-Works, and a new customer has been found in the Manager, Incumbered Estates, who was supplied with 3,000 maunds for a steam-engine working a pump.

58. The export of wood to Bombay is keeping about the same as last year. The contractor removed the balance due on his contract up to end of October 1887, and tenders being called for for a fresh contract, the same contractor's tender was accepted for a minimum quantity of 300,000 of cubic feet. Of this quantity 192,582 had been removed up to end of March; the balance will be taken out by the end of next October.

59. A statement showing the total quantity of firewood cut and charcoal manufactured departmentally and sold in the forests during the year under report and the previous year is given below :—

Name of Division.	Firewood in Maunds.		Charcoal in Maunds.	
	1886-87.	1887-88.	1886-87.	1887-88.
Sukkur	22,688	700	...	...
Naushahro	8,525	5,785	3,675	5,657
Hyderabad	11,207	794	815	10,447
Jerruck	162,280	109,260	24,838	27,170
Total. ...	204,700	116,539	29,328	43,274

The falling off in firewood is due to decreased consumption in brick and lime-burning in Upper Sind and smaller demand in Lower Sind generally.

60. Government having determined to abolish the Commissioner's steamer *Jhelum*, I applied on 18th January 1887 to have the steamer and her flat transferred to the Sind Forest Department to be worked for the transport of wood-fuel. I felt sure I could make the steamer pay her expenses, and that it might be an advantage on public grounds to keep a steamer on the Indus at the disposal of the authorities.

In the following May the sanction of Government to the transfer of the steamer was received, and I put her in commission and worked her for a month with an establishment sanctioned for the month at Rs. 450. The experiment showed (1) that the steamer, worked without the flat, would not pay, as she had not sufficient carrying capacity; (2) that she could not tow the flat loaded upstream; (3) that worked with the flat in bringing wood down the river she could be made to pay undoubtedly, provided there was sufficient wood for her to lift to keep her continuously employed—that is, by making five or six trips a month. In keeping her so employed there would be no difficulty so long as the fuel demand of the railway remained at its normal figure. After the expiry of the month for which sanction had been granted for the pay of the crew, &., I put the steamer out of commission again and reported the results of the experimental working of the steamer for further orders. On 17th February, Government Resolution No. 863 of 8th February, giving sanction to the employment of a full crew and the other working expenses of the steamer came to hand; but as the sanction then given would expire at the

end of the month, and in the meanwhile the railway authorities had cancelled their indent for fuel for the year and stated that they had enough to last them till June 1889, and I had already reported that under these circumstances the steamer could not be worked to advantage. She was not put in commission again, and the orders of Government with regard to her final disposal were awaited.

SECTION 2.—REMOVAL OF PRODUCE BY PURCHASERS.

61. The value of timber and firewood removed by purchasers is given in the following table for two years. This does not include the revenue derived by the permit pass system:—

Division.	Timber.		Firewood.	
	1886-87.	1887-88.	1886-87.	1887-88.
Sukkur	4,241	4,709	766	951
Naushahro	405	325	70	154
Hyderabad	526	1,322	1,525	859
Jerruck	590	913	344	432
Total...	5,762	7,269	2,705	2,396

62. The following table shows the collections of revenue on the "permit pass system" for two years:—

Division.	Name of Ghat.	Revenue realized.	
		1886-87.	1887-88.
Sukkur	Rahuja	10,275	12,634
	Thali		
	Rohri		
	Sadar	14,786	16,449
	Stewart		
	Khura		
Naushahro	Larkana	2,748	2,599
Hyderabad	New Fuleli	842	698
	Old Fuleli		
	Hajipur		
	Total Rs....	28,651	32,380

SECTION 3.—FREE GRANTS.

63. Timber, &c., was given free to the value of Rs. 785-0-0 to poor agriculturists and to villagers who had suffered loss of their houses from fire and the erosion of the river.

64. A sum of Rs. 60-0-0 was refunded to contractors of the Irrigation Department, who had been supplied with firewood in accordance with the ruling contained in Government Resolution No. 2432 of 7th May 1879. This order has now been cancelled, but there would be no objection to gratis grant of all timber and forest material required by the Irrigation Department, if that department gave every facility for passing surplus water from their canals into the forests.

Section 4—Summary of Produce.

65. The timber cut and removed from the forest by departmental agency during the last two years is given below :—

Division.	Timber of all kinds, in cubic feet.		Posts, No.		Rafters, No.	
	1886-87.	1887-88.	1886-87.	1887-88.	1886-87.	1887-88.
Sukkur	7,700	7,982	12,919	11,212	41,578	73,261
Naushahro ...	1,777	526	1,750	2,965	21,509	46,342
Hyderabad ...	19,229	5,058	5,919	4,015	105,991	146,482
Jerruck	9,750	11,342	420	252	1,473	...
Total...	38,456	24,908	21,008	18,444	170,551	266,085

66. The quantity of timber removed by purchasers during the same time is as under :—

Division.	Timber of all kinds, in cubic feet.		Posts, No.		Rafters, No.	
	1886-87.	1887-88.	1886-87.	1887-88.	1886-87.	1887-88.
Sukkur	3,559	3,627	3,059	980	102,234	78,911
Naushahro ...	2,465	1,412	...	...	5,842	7,029
Hyderabad ...	927	2,911	600	3,155	7,791	11,915
Jerruck	1,536	847	274	758	7,220	1,629
Total ...	8,487	8,797	3,933	4,893	123,087	99,484

67. The total yield in timber of each division is given below for two years :—

Division.	Timber of all kinds, in cubic feet.		Posts, No.		Rafters, No.	
	1886-87.	1887-88.	1886-87.	1887-88.	1886-87.	1887-88.
Sukkur	11,259	11,609	15,978	12,192	143,812	152,172
Naushahro ...	4,242	1,938	1,750	2,965	27,351	53,371
Hyderabad ...	20,156	7,969	6,519	7,170	113,782	158,397
Jerruck	11,286	12,189	694	1,010	8,693	1,629
Total...	46,943	33,705	24,941	23,337	293,638	365,569

68. The total yield of each division in firewood for the same is as under:—

Division.	Sold at Depots.		Sold on edge of Forests.		Supplied to Departments.		Removed by Purchasers.	
	1886-87.	1887-88.	1886-87.	1887-88.	1886-87.	1887-88.	1886-87.	1887-88.
	Maunds.	Maunds.	Maunds.	Maunds.	Maunds.	Maunds.	Maunds.	Maunds.
Sukkur	6,152	8,909	23,388	700	1,321,669	789,502	381,668	499,141
Naushahro	2,803	3,888	8,525	2,423	431,147	433,247	45,190	43,893
Hyderabad	1,60,082	50,042	11,207	794	384,724	395,753	35,242	23,516
Jerruck	9,297	313	1,62,280	68,710	170,288	178,327	5,114	4,147
Total...	178,334	63,152	205,400	72,627	2,307,828	1,796,829	467,214	570,697

69. The total yield of charcoal of each division is as under:—

Division.	Charcoal in Maunds.	
	1886-87.	1887-88.
Sukkur	2,769	2,050
Naushahro	3,675	5,756
Hyderabad	2,694	11,232
Jerruck	26,608	27,831
Total.....	35,746	46,869

70. The total yield of the whole Circle in timber, firewood and charcoal for two years is given below:—

Timber	1886-87	C. ft.	46,943
	1887-88	,,	33,705
Sleepers	1886-87	No.	2,388
	1887-88	,,	5,301
Posts	1886-87	No.	24,941
	1887-88	,,	23,337
Rafters.....	1886-87	No.	293,638
	1887-88	,,	365,569
Firewood.....	1886-87	No.	31,58,776
	1887-88	,,	25,03,305
Charcoal	1886-87	No.	35,746
	1887-88	,,	46,869

71. The following table gives the realizations from the sale of farms for the collection of minor produce for two years:—

Division.	Babul Pods.		Lac.		Munj and Sar grass.		Fishery.	
	1886-87.	1887-88.	1886-87.	1887-88.	1886-87.	1887-88.	1886-87.	1887-88.
Sukkur	247	240	...	...	583	614	1,265	2,008
Naushahro	2,037	1,633	...	...	312	413	390	504
Hyderabad	6,944	6,939	672	756	...	...	493	368
Jerruck	2,803	2,914	...	...	100	25	244	594
Total ..	12,031	11,726	672	756	995	1,052	2,392	3,474

72. The area under cerial crops and the revenue realized by assessment on the land cultivated within forest limits is given below for two years :—

Division.	Area under cultivation.				Amount realized by assessment.			
	Kharif.		Rabi.		Kharif.		Rabi.	
	1886-87.	1887-88.	1886-87.	1887-88.	1886-87.	1887-88.	1886-87.	1887-88.
					Rs.	Rs.	Rs.	Rs.
Sukkur	525	827	1,875	2,619	1,275	2,087	6,434	7,922
Naushahro	444	318	2,145	1,613	1,353	1,512	6,351	6,282
Hyderabad	287	448	1,074	717	720	1,357	3,175	1,820
Jerruck	1,137	1,640	350	340	3,055	3,391	682	589
Total...	2,393	3,233	5,444	5,289	6,403	8,347	16,642	16,613

73. Realizations from grazing fees during the last two years are given in the following table :—

Division.	Grazing fees.	
	1886-87.	1887-88.
	Rs.	Rs.
Sukkur	13,947	17,268
Naushahro	7,705	8,135
Hyderabad	13,611	14,731
Jerruck	10,604	12,855
Total Rs...	45,867	52,989

Section V.—Export of Forest Produce.

74. 355 babul logs, measuring 8,529 cubic feet, were sent to the Gun-Carriage Factory in Bombay.

75. The firewood exported to Bombay and Katiawar Coast amounted to 324,555 cubic feet.

76. There must be an increase in the export of charcoal from Karachi, as the quantity taken from the forests is greater than last year; but no figures can be given showing what quantity was exported of charcoal actually made in the Government forests. An immense quantity is made by holders of private forests and by men who take over the trees that have to be cut on canal banks under the control of the Irrigation Department.

77. The efforts to get babul bark into the European markets appear to promise success. An application has been received for a monopoly of the right to purchase babul bark from the Sind Forests with a view to exporting it.

Chapter V.—Financial Results.

78. A statement showing the total receipts during the last two years is given below :—

	Actuals for 1886-87.	Actuals, 1887-88.	Increase.	Decrease.
	Rs.	Rs.		Rs.
Receipts	6,85,782	6,32,302	.....	53,480
Expenditure A, Conservancy & Works.	4,04,090	3,54,985	.....	49,105
„ B, Establishment	1,13,613	1,11,142	.....	2,471
Total Expenditure	5,17,703	4,66,127	.....	51,576
Net Revenue	1,68,079	1,66,175	.....	1,904

79. The receipts and expenditure under each main head during the same period are as follows :—

Receipts.	1886-87.	1887-88.
	Rs.	Rs.
I.—Timber and other produce removed from the forests by Government agency	5,61,103	4,94,287
II.—Timber and other produce removed from the forests by consumers or purchasers ...	96,974	1,10,071
III.—Confiscated drift and waif wood	131	2
V.—Miscellaneous	27,574	27,942
Total Receipts...	6,85,782	6,32,302
A.—Expenditure, Conservancy and Works.		
I.—Timber and other produce removed from the forests by Government agency	3,85,346	3,41,389
II.—Timber and other produce removed from the forests by consumers or purchasers ...	10	12
III.—Confiscated drift and waif wood	4	...
VI.—Live stock, stores, tools and plant	1,900	1,018
VII.—Communication and buildings	795	407
VIII.—Demarcation, improvement and extension of forests	16,013	11,921
IX.—Miscellaneous	22	238
Total A, Conservancy and Works ...	4,04,090	3,54,985
B.—Establishment.		
I.—Salaries	91,824	90,363
II.—Travelling Allowances	17,216	16,593
III.—Contingencies	4,573	4,186
Total B, Establishment ...	1,13,613	1,11,142
Grand Total of Expenditure.	5,17,703	4,66,127

80. There is a falling off of Rs. 1,904 in net revenue as compared with the previous year, but no less than Rs. 3,597-13-2, the cost of the maintenance of the steamer *Jhelum before* she was made over to the Forest Department, has been debited to the Sind Circle under the authority of Government Resolution No. 1870 of 20th July 1887. If it had not been for this I would have been able to show a net revenue even larger than that of last year, which was the highest on record. The receipts under firewood and charcoal show a net deficit of Rs. 70,962 due to the falling off in the consumption of firewood by the railway, but this would have been more than covered by the better receipts from all other heads if the accounts of this Circle had not been debited with the cost of the upkeep of the *Jhelum* before she was made over to the department.

General Remarks.

81. The collapse of the wheat export trade from Karachi has so diminished the traffic on the North-Western Railway that the locomotive fuel the railway authorities had indented for for the fifteen months from 1st October 1886 to 31st December 1887 is said by them to be sufficient to last them till June 1889. The felling operations in consequence have been unimportant, and if the estimate of the railway authorities is correct, the Upper, Central and Sind Forests will get complete rest for nearly two years.

82. There is nothing particular to report in connection with the Forest Reserves. Such of them as I was able to inspect personally were in excellent order, except some of the reserves lately taken up in the Dadu, Mehar, and Shikarpur Districts; these are poor scrub-jungle, and suffer so much from want of water that their improvement is very slow.

83. There being a prospect of a railway being constructed through the Thar and Parkar Districts, I extended my tour into these districts with a view to ascertaining their capabilities to supply a line with locomotive wood fuel.

84. I entered the district at Bokhoro in the Nara Valley where the Mithrau Canal issues through a regulator from the Mukhi dand or lake. The margin of the lake is an extensive natural forest estimated at 20,000 acres. From Bokhoro I followed the Mithrau to Sindri, and from there marched to Khipra on the Nara. The greater part of the country I went through is uncultivated, and in the part lying between the Mithrau Protective Band and the Nara, there is some good jungle. At Khipra I was joined by Mr. Showkiram, Sub-Assistant Conservator, whom I had directed to go to Bakhar and follow the Nara down to Khipra. From Khipra I went down the Nara to Sufi, and sent Mr. Showkiram overland, *viâ* Khai, to inspect the country on that line. From Sufi I was able to inspect the country to the south-west lying between the Nara river and the Samara Dand. The land is nearly all waste with some jungle on it. From Sufi I went to Umarkot. I could not well find time to go further, nor would my Sind camels have been able to march over the sand hills that lie to the east of Umarkot; so that my inspection of them was limited to two sides, one in an easterly and the other in a south-easterly direction. I crossed several ranges of the sand hills on each occasion. The character of the country did not change, and I was assured I had seen a fair sample of the whole tract. Sand hills is a misnomer and gives an idea of shifting sand. The ridges consist of fine gravel sand and soil fairly well consolidated. The roads are heavy, as the light soil cuts up easily, but the hill sides are firm and covered with bushes and grass clumps, and here and there there are a few trees growing singly or in clumps. In the valleys there are patches of turf. After good rain the country would afford abundant grazing, but the

country has suffered much from want of rain the last few years, and I saw it under unfavourable circumstances. From Umarkot I returned to the Nara, crossed the river at a place called Narhadi, from whence I inspected the land lying to the west and north-west of it. The greater part of this land is waste, and there is a good deal of babul and other jungle on it. From Narhadi I marched to Golari, and from there inspected a very large area of jungle covered land, which practically finished my inspection of the district.

85. There is a very considerable area under trees in the Nara Valley which can be classed as follows:—

(*a*) Land round the margin of the Mukhi Dand.

(*b*) Land on the banks of the Nara watered by the overflow of the river; part of this land lies between the bank of the river and an embankment which runs along either bank more or less continuously from Bakhar to some miles below Khipra.

(*c*) Land beyond the reach of the present floods from the river on which jungle came into existence before the floods were kept under control and inundated the country generally.

(*d*) Land similar to the above, but lying within the embankments put up to protect land cultivated on the Mithrau Canal from possible floods from the Nara. The land round the margin of the Mukhi Dand is a large natural forest estimated to have an area of 20,000 acres under trees: tamarisk, kandi (*Prosopis Speiegera*), and a little babul. It is a very useful fuel and fodder reserve, and affords grazing to large number of cattle, especially in seasons of scarcity elsewhere. If the jungle was required as a fuel reserve for a railway, it is capable of yielding over 12,00,000 cubic feet of locomotive fuel yearly for a continuance under proper management. The wood would have to be boated down the Mirhrau.

86. An area of 13,440 acres of this land is reserved as forest under a local order, and there is a small protective establishment to look after it and collect grazing-fees.

87. The land on the banks of the Nara within the influence of the overflow of the river is a jungle of tamarisk with a little kandi in places. The area within workable distance of the proposed line is estimated at 30,000 acres and to yield over 18,00,000 cubic feet of locomotive fuel yearly. The land of this class, lying between the Nara and the Samara Dand, is open grass land with a green turf on which large herds of cattle are to be seen grazing. Patches of jungle have been cleared for cultivation aggregating about a thousand acres in the whole length, but further clearances have been prohibited by the Deputy Commissioner, Thar and Parkar.

88. The land between the Nara and the Mithrau Protective Band has a very large area under forest, chiefly babul with kandi, both mixed with the babul and in patches. An area of about 55,489 acres is nominally reserved under the orders of the Deputy Commissioner, Thar and Parkar; but there is no protective establishment, and as the land is beyond the reach of the ordinary floods from the river, the jungle is either dead or dying out for want of water and the presence of salt in the subsoil which prevents trees from thriving in the absence of surface irrigation to keep the salt down. If water can be made available from the Nara by a separate cut designed especially for the irrigation of the forest, and a fuel reserve is made, an area of, say, 16,000 acres could be put under forest, if fuel reserves were required for a railway. If watered, it would also be excellent grazing ground, as the remains of the grass still to be seen shows it to have been of the best quality for cattle. It is quite possible that if the land was taken up as fuel and fodder reserves and irrigated, that the grazing fees alone would pay the cost of maintenance and protection. The grazing would be both good and safe which the grazing on the inundated lands on the banks of the Nara is not, and kills off a very large number of cattle yearly. Cattle graziers in Sind are

quite alive to the value of good grazing, and are willing to pay for it. The grazing-fees in the Sind Circle in the year under report have paid the whole cost of the protective establishment of the Circle, and left a balance of Rs. 11, 908 in addition.

89. There is a very large area under forest in the land lying between the protective band on the east and the Mithrau, but as all the water is under careful control, none of it is permitted to water the jungles which is fast dying out, and the land will be cleared shortly for cultivation. It is expected that in a very few years the whole of the land within the protective bands will be taken up for cultivation, and that there will be none to spare for fuel or fodder reserves.

90. I have much pleasure in reporting that all the officers serving under me have striven to do their duty. Of the subordinate establishment, I may mention Forest Ranger Pribdas. This officer has always carried on his work with zealous devotion to duty and conspicuous success.

91. The results obtained by him in the experimental cotton cultivation, alluded to in para. 41, speak for themselves.

92. The records and accounts of all the Divisional Forest Officers were examined and found to be satisfactory.

J. G. MACRAE, Colonel,
Conservator of Forests, Sind Circle.

No. 3555 OF 1888.

REVENUE DEPARTMENT.

Commissioner's Office,
Karachi, 6th October 1888.

Submitted to Government.

2. The area under the control of the Forest Department was largely increased during the year under report, as the orders of Government were received on the proposals of the Forest Settlement Officer. There were at the close of the year proposals affecting an area of 82,631 acres and 99 guntas on which the orders of Government have not yet been passed. Of these, those relating to the talukas marginally noted have since been disposed of. The office of the Special Forest Settlement Officer was reduced during the year, and the Commissioner would take this opportunity of recording his approval of the manner in which the work entrusted to Mr. Mules was carried out.

Naushahro Abro, G. R. No. 3707 of 6th June 1888.
Jacobabad, G. R. No. 2203 of 11th April 1888.
Thul, G. R. No. 5787 of 27th August 1888.
Sujawal, G. R. No. 2309 of 17th April 1888.

3. The action of the river on the river-side forests has resulted in a slight gain in area to the department.

4. There were considerable changes in the *personnel* of the department, and the Jacobabad Sub-division was abolished; but there is little else noticeable in Chapter III of the Report as regards the ordinary work of the department. It is satisfactory to observe that the reserves are capable of supplying grazing to a considerable extent in years of deficient rainfall, and the remarks in para. 41, regarding the results obtained from the small mango plantation, are interesting evidence as to profits derivable from careful cultivation in Sind. There appears also from para. 42 to be a future for babul bark as a tanning agent. If the demand for this bark developes, it will be of material assistance to the Sind Forest Department.

5. It is unnecessary to follow the Conservator through the details given in the tabulated statements comprised in Chapter IV, showing the outturn of the different divisions. There appears to be an appreciable advance in the direction of establishing a revenue independently of the railway demand for fuel, and as the latter demand is yearly growing more precarious owing to the development of coal fields and petroleum in the Punjab and Baluchistan, no effort should be spared to foster other sources of revenue.

6. The financial results of the year must be considered satisfactory. But for the special charge of Rs. 3,597-13-2, referred to in para. 80, the net revenue of the department would have been in excess of last year's, which was the largest obtained up to that year. As it is, the income is only Rs. 1,904 behind last year's, and that in spite of an appreciably diminished railway demand for fuel.

7. Turning to the expenditure of the department, it appears from Statement No. 58, that the percentage expenditure on conservancy and works is rather high, and varies in the different divisions to an extent which appears to require explanation. The figures are :—

Sukkur...	... 52·11	per cent.	on revenue.
Hyderabad	... 55·22	do.	do.
Jerruck...	... 56·49	do.	do.
Naushahro	... 61·09	do.	do.

showing a range of 9 per cent. in the cost of working the different subdivisions. The Conservator's attention has been called to this matter. For the rest the year appears to have been a normal one, and the results obtained call for no special remark. The subordinates appear to have worked well and the general administration of the department by Colonel MacRae has been as usual very satisfactory.

C. B. PRITCHARD,
Commissioner in Sind.

ANNUAL FORM No. 49.

ANNUAL FORM

FOREST DEPARTMENT, BOMBAY,

Area of Reserved

Division or Range.	Civil District or Territory.	Name of Forest.	Area on 1st April 1887. Acres.	Area on 1st April 1887. Equivalent in square miles.	Added during the year. Acres.
		Raoti	8,029	13	...
		Jamshero	5,059	8	200
		Daresh	2,025	3	+57 1,000
		Ubauro	3,150	5	...
		Mirpur	6,511	10	740
		Baharki	1,654	3	...
		Reti	2,388	4	...
		Rangu	972	2	...
		Narli	1,376	2	...
		Sarhad	...	...	3,529
		Jehanpur	...	...	4,340
		Islam	...	...	2,064
Sukkur.	Shikarpur.	Bahab	9,185	14	...
		Budh	1,217	2	...
		Sadhuja	13,599	21	600
		Shahpur	9,715	15	400
		Panwhari	637	1	...
		Hussenheli	3,407	5	...
		Azizpur	880	1	...
		Ding	1,518	2	...
		Syedpur	7,647	12	569
		Rohri	8,302	13	14,249
		Sultanpur	...	...	1,753
		Saliani	...	...	5,014
		Ghotki	4,200	7	...
		Adilpur	...	...	1,423 +11,251
		Carried over...	91,471	143	47,189

Hyderabad,
10th September 1888.

No. 49.

SIND CIRCLE.

Forests, 1887-88.

Excluded or transferred to other heads.	Area on 31st March 1888.		No. and date of Notification of addition or transfer.	REMARKS.
Acres.	Acres.	Equivalent in square miles.		
...	8,029	13		
...	5,316	8	Mo. 2553 of 26th April 1887 ...	Gained by action of the river.
...	3,025	5		
...	3,150	5		
...	7,251	11	No. 3508 of 7th June 1887.	
...	1,654	3		
...	2,388	4		
...	972	2		
...	1,376	2		
...	3,529	6	No. 2553 of 26th April 1887.	
...	4,340	7		
...	2,064	3	No. 3508 of 7th June 1887.	
600	8,585	13	.....	Lost by action of the river.
...	1,217	2		
400	13,742	21	No. 3544 of 8th June 1887	Gained and lost by action of the river.
+57 200	9,915	15	.....	Do. do. do.
...	637	1		
...	3,407	5		
...	880	1		
...	1,518	2		
...	8,216	13	No. 2554 of 26th April 1887.	
...	22,551	35		
...	1,753	3	No. 2553 of 26th April 1887.	
...	5,014	8		
...	4,200	7		
...	12,674	20	Nos. 3508 of 7th June 1887. „ 2553 „ 26th April 1887.	
1,257	1,37,403	215		

		Brought over...	91,471	148	47,189
Sukkur.	Shikarpur.	Walu Mahar	...	...	2,648
		Samowah	...	...	2,252
		Vasir	...	...	1,417
		Jarwar	...	...	2,839
		Kote Shahu	1	...	...
		Abad	5,429	8	500
		Kadirdini Bindi	2,306	4	...
		Khiabindi	3,318	5	...
		Shah	14,083	22	2,200
		Bindi Dhareja.....	7,454	12	100
		Kadrapur	2,485	4	79
		Mohro Mari.....	...	...	11,857
		Andaldal	12,243	19	400
		Bagarji	14,420	23	...
		Raiswah	905	1	...
		Lakhi	...	...	3,614
		Garhi Halim	...	...	2,096
		Kote Sultan	...	...	17,342
	Upper Sind Frontier.	Abad	1,127	2	...
		Mehrabpur	1,457	2	...
		Dilawarpur	1,439	2	...
		Milkiat Sircar.....	910	1	...
		Bakapur	8,359	13	...
		Dilmurad.....	1,055	2	...
		Zangipur.....	5,359	8	...
		Sarki	3,706	6	...
		Beluchabad.....	1,100	2	...
		Korar	887	1	...
		Total...	1,79,514	280	94,533

1,257	1,37,403	215		
...	2,648	4	} No. 2553 of 26th April 1887.	
...	2,252	4		
...	1,417	2	} No. 3508 of 7th June 1887.	
...	2,839	4		
1	...	...	.....	Lost by action of the river.
200	5,729	9	.....	Gained and lost by do.
...	2,306	4		
...	3,318	5		
100	16,183	25	.....	Do. do. do.
50	7,504	12	.....	Do. do. do.
...	2,564	4	No. 2552 of 26th April 1887.	.....
...	11,857	19	No. 8027 of 23rd November 1887	.....
...	12,643	20	.....	Gained by action of the river.
...	14,420	23		
...	905	1		
...	3,614	6	} No. 1552 of 26th April 1887.	
...	2,096	3		
...	17,342	27	No. 8027 of 23rd November 1887	
...	1,127	2		
...	1,457	2		
...	1,439	2		
...	910	1		
...	8,359	13		
...	1,055	2		
...	5,359	8		
...	3,706	6		
...	1,100	2		
...	887	1		
1,608	2,72,439	426		

Naushahro.	Shikarpur.	Dosu	4,633	7	...
		Keti Ubhuro	5,575	9	...
		Kanuri	4,030	6	...
		Sharifpur	1,027	2	...
		Bahman	1,547	2	...
		Naoabad	2,205	3	...
		Phati Bilawal	711	1	...
		Amrote	...	...	11,684
		Muso	...	...	5,930
		Kasimshah	2,107	3	...
		Nari	1,522	2	...
		Magsi	1,383	2	...
		Dangar	3,685	6	...
		Soi	...	...	5,108
		Budo Dero	...	...	1,555
		Ghau Gharko	...	...	5,849
		Gaji Dero	...	...	4,333
	Hyderabad.	Bhour	9,839	15	...
		Muhbatdero	7,780	12	100
		Samtia	3,290	5	10
		Kamaldero	1,365	2	...
		Bhorti	10,500	16	...
		Dalipota	867	1	...
		Khairodero	13,523	21	...
		Lalia	4,162	7	400
		Carried over ...	79,751	122	34,969

300	4,333	7		Lost by action of the river.
...	5,575	9		
...	4,030	6		
...	1,027	2		
...	1,547	2		
...	2,205	3		
...	711	1		
...	11,684	18	No. 3409 of 1st June 1887.	
...	5,930	9		
...	2,107	3		
...	1,522	2		
...	1,383	2		
...	3,685	6		
...	5,108	8	No. 2551 of 26th April 1887.	
...	1,555	2		
...	5,849	9		
...	4,333	7		
1,000	8,839	14		Lost by action of the river.
380	7,500	12		Gained and lost by do.
...	3,300	5		Gained by do.
...	1,365	2		
3,300	7,200	11		Lost by do.
...	867	1		
...	13,523	21		
100	4,462	7		Gained and lost by do.
5,080	1,09,640	169		

Naushahro —*continued.*	Karachi.	Brought over ...	79,751	122	34,969
		Karampur	2,904	5	...
		Baghban	1,947	3	...
		Bhan	1,138	2	...
		Phaka	2,207	3	...
		Kaluhori	748	1	...
		Pipri	925	1	...
		Total...	89,620	137	34,969
Hyderabad.	Hyderabad.	Lakhat	6,130	10	300
		Nasri	2,256	4	300
		Mad	2,692	4	...
		Mehrabpur	3,938	6	150
		Mari	15,803	25	500
		Pai	5,130	8	...
		Keti Jurio	2,025	3	...
		Rano	1,627	3	...
		Nurketi	3,418	5	...
		Kacho Nurketi	3,641	6	..
		Bhanote	841	1	...
		Khanote	8,966	14	...
		Khebrani	760	1	...
		Sekhat	2,067	3	...
		Jakhri	1,926	3	...
		Matari	5,354	8	...
		Ghalli	4,041	6	...
		Miani	4,917	8	...
		Kathri	756	1	...
		Carried over...	76,288	119	1,250

5,080	1,09,640	169	
...	2,904	5	
...	1,947	3	
...	1,138	2	
...	2,207	3	
...	748	1	
..	925	1	
5,080	1,19,509	184	
...	6,430	10	Gained by action of the river.
...	2,556	4	Do. do. do.
...	2,692	4	
...	4,088	6	Do. do. do.
...	16,303	25	Do. do. do.
...	5,130	8	
...	2,025	3	
...	1,627	3	
...	3,418	5	
...	3,641	6	
...	841	1	
...	8,966	14	
...	760	1	
...	2,067	3	
...	1,926	3	
...	5,354	8	
...	4,041	6	
...	4,917	8	
...	756	1	
...	77,538	119	

		Brought over...	76,288	119	1,250
Hyderabad —*continued.*	Hyderabad —*continued.*	Gundi	2,150	3	...
		Muhammad Khan	181	...	...
		Jamshoro	292	...	...
		Shah Makai	411	1	...
		Keti Mehrani	5,503	9	...
	Karachi.	Gidarji	855	1	...
		Butho	7,848	12	60
		Manjhand	1,539	2	...
		Unarpur	10,669	17	160
		Ghag	1,296	2	...
		Karokho	1,701	3	...
		Total...	1,08,733	169	1,470
Jerruck.		Viran	8,362	13	...
		Sonda	2,114	3	...
		Hilaya	2,898	5	50
		Lalang	4,901	8	50
		Shah Lonko	1,690	3	...
		Garko	4,079	6	...
		Penah	6,169	10	...
		Susati	39	...	50
		Khirsar	1,380	2	...
		Huderani	5,511	9	...
		Surjani	1,387	2	...
		Ganj	1,853	3	100
		Hazari	2,483	4	...
		Carried over...	42,866	68	250

...	77,538	119		
...	2,150	3		
...	181	...		
...	292	...		
...	411	1		
...	5,503	9		
...	855	1		
...	7,908	12		Gained by action of the river.
...	1,539	2		
50	10,779	17		Gained and lost by d°.
...	1,296	2		
...	1,701	3		
50	1,10,153	169		
...	8,362	13		
...	2,114	3		
...	2,948	5		Gained by action of the river.
150	4,801	8		Gained and lost by d°.
...	1,690	3		
...	4,079	6		
...	6,169	10		
...	89	...		Gained by action of the river
...	1,380	2		
...	5,511	9		
23	1,364	2	No. 8318 of 6th December 1887.	
460	1,493	2		Gained and lost by action of the river.
...	2,483	4		
633	42,483	67		

		Brought over...	42,866	68	250
Jerruck—*continued.*	Karachi—*continued.*	Makhulo	496	1	...
		Laikpur	7,406	12	...
		Khadi	4,050	6	...
		Phatah	313	...	100
		Mulchand	5,454	9	...
		Malir	24	...	...
	Hyderabad.	Husri	420	1	...
		Khatro	416	1	...
		Khathar	2,975	5	...
		Katiar	952	1	...
		Khirdahi	290	...	...
		Tikhur	1,709	3	...
		Khokhur	1,556	2	...
		Budka Takur	975	2	...
		Total...	69,902	111	350

No. 49.

SIND CIRCLE.

Forests, 1887-88.

Excluded or transferred to other heads.	Area on 31st March 1888.		No. and date of Notification of addition or transfer.	REMARKS.
Acres.	Acres.	Equivalent in square miles.		
633	42,488	67		
...	496	1		
...	7,406	12		
50	4,000	6		Lost by action of the river.
...	413	1		Gained by do. do.
...	5,454	9		
...	24	...		
...	420	1		
...	416	1		
...	2,975	5		
...	952	1		
...	290	...		
...	1,709	3		
...	1,556	2		
...	975	2		
683	69,569	111		

J. G. MACRAE, Colonel,
Conservator of Forests, Sind Circle.

ANNUAL FORM No. 49 A.

FOREST DEPARTMENT, SIND CIRCLE.

Area of Protected Forests, 1887-88.

Division or Range.	Civil District or Territory.	Name of Forest.	Area on 1st April 1887.		Added during the year.	Excluded or transferred to other heads.	Area on 1st March 1888.		No. and date of Notification of addition or transfer.	REMARKS.
			Acres.	Equivalent in square miles.	Acres.	Acres.	Acres.	Equivalent in square miles.		
Sukkur	Upper Sind Frontier	Macaulay	...	...	183	...	183	...	No. 4410 of 13th July 1887.	
		Dickinson	...	...	585	..	585	1		
		Total...	...	...	768	...	768	1		

Hyderabad,
10th September 1888.

J. G. MACRAE, Colonel,
Conservator of Forests, Sind Circle.

ANNUAL FORM No. 50.

FOREST DEPARTMENT, SIND CIRCLE.

Prosecutions for breaches of Forest Rules during 1887-88.

Forest Division and Civil District.	Cases pending from 1886-87.	New Cases of the Year.					Total cases.	Disposed of during the Year.						Cases pending at close of year.
		Injury to forest by fire.	Unauthorised felling or appropriation of wood and minor forest produce.	Grazing without permission or in tracts in which grazing is prohibited.	Other offences.	Total new cases of the year.		Convictions.		Acquittals.		Total.		
								Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	
Upper Sind Frontier District.														
Sukkur Division	...	...	47	...	14	61	61	40	40	20	28	60	68	1
Shikarpur District.														
Sukkur Division	3	2	22	6	11	41	44	22	38	19	36	41	74	3
Naushahro ,,	...	...	2	1	...	3	3	2	5	1	2	3	7	...
Hyderabad District.														
Naushahro Division	1	...	2	...	2	4	5	2	3	3	8	5	11	...
Hyderabad ,,	...	1	8	...	...	9	9	5	7	4	16	9	23	...
Karachi District.														
Naushahro Division	...	...	4	...	...	4	4	3	9	1	6	4	15	...
Hyderabad ,,	...	...	1	...	1	2	2	2	2	...	...	2	2	...
Jerruck ,,	...	...	1	5	...	6	6	2	3	4	17	6	20	...
Total...	4	3	87	12	28	130	134	78	107	52	113	130	220	4

Hyderabad,
10th September 1888.

J. G. MACRAE, Colonel,
Conservator of Forests, Sind Circle.

FORM No. 51.

FOREST DEPARTMENT, SIND CIRCLE.

Area of forest tracts protected from fire during the dry season of 1888, to accompany report for 1887-88.

Division.	Forest tracts.	Year in which commenced.	Area actually protected up to 15th June 1887.	During dry season of 1888.			Cost during the season.	Remarks.
				Area attempted to be protected.	Failures.	Area actually protected.		
Sukkur	Mirpur	Not known	28,780	43,094	222	42,872	23	As all the forests are equally protected against fire, the entire area of the Sind forests has been given in column "Area attempted to be protected."
	Ghotki		3,800	26,030	80	25,950		
	Sadhuja		47,903	77,435	1,088	76,347		
	Abad		35,035	49,461	24	49,437		
	Sukkur	Do.	26,573	27,063	401	26,662		
	Shikarpur	1886-87	905	23,957	26	23,931		
	Jacobabad	1885-86	13,292	13,292	2	13,290		
	Thul		12,107	12,107	.....	12,107		
Naushahro	Bakrani	Not known	19,252	37,042	440	36,602		
	Tigir		8,697	25,542	.....	25,542		
	Kandiaro		33,251	29,071	708	28,363		
	Sehwan		27,538	27,854	30	27,824		
Hyderabad	Rano	Not known	47,166	48,751	244	48,507		
	Miani		30,894	31,118	51	31,067		
	Hyderabad		703	703	.....	703		
	Kotri		7,204	7,204	.....	7,204		
	Unarpur		22,187	22,377	6	22,371		
Jerruck	Viran	Do.	24,068	24,018	.....	24,018		
	Shahbandar		36,388	36,258	250	36,008		
	Katiar		9,293	9,293	.....	9,293		
		Total...	435,036	571,670	3,572	568,098	23	

Hyderabad,
10th September 1888.

J. G. MACRAE, Colonel,
Conservator of Forests, Sind Circle.

ANNUAL FORM No. 52.

ANNUAL FORM No. 52.

FOREST DEPARTMENT, SIND CIRCLE.

Area of Plantations 1887-88.

Division.	Name of Plantation.	Area in Acres				Receipts	Charges	Remarks.
		On 1st April 1887.	Added during the year.	Excluded during the year.	Area on 31st March 1888.	of the year.		
	Regular Plantation.							
Sukkur ...	Aliwhan Garden	20	...	...	20	8	84	
	Rahuja Nursery	10	...	...	10	140	495	
	Sadhuja Plantation	80	...	55	25	...	84	
	Shah do.	7	...	...	7	...	294	
Hyderabad ...	Devi-Devi Plantation	13	...	...	13	452	273	
	Bamboo do.	13	...	...	13	...	270	
	Miani Bungalow, Mango and Monument Gardens,...	12	...	...	12	275	575	
Jerruck ...	Malir Nursery...	24	...	...	24	25	120	
	Sonda	5	...	...	5	212	462	
	Total	184	...	55	129	1,112	2,657	
	Cultural Operation.							
Sukkur ...	Abad	10	...	...	10	...	...	
	Bindi Dhareja	27	6	...	33	...	77	
	Ding	35	25	35	25	...	...	35 acres were opened to grazing, the growth attained such dimension as not to require any protection.
	Sadhuja	40	...	40	...	...	...	40 Do. do.
	Rohri	25	25	25	25	...	...	25 Do. do.
	Syedpur	5	4	5	4	...	...	5 Do. do.
	Chanjni	5	2	5	2	...	...	5 Do. do.
	Saliani	20	2	20	2	...	...	20 Do. do.
	Adilpur	35	15	35	15	...	47	35 Do. do.
	Samowah	...	7	...	7	...	...	
	Total	202	86	165	123	...	124	
Naushahro ...	Kamaldero	...	910	910	...	...	...	910 acres were opened to grazing.
	Bhour	24	220	220	24	...	...	220 Do. do.
	Mohbatdero	700	210	860	50	...	...	860 Do. do.
	Bhorti	290	...	...	290	...	...	
	Karampur	25	...	...	25	...	...	
	Keti Lalia	25	...	25	...	...	...	25 Do. do.
	Sharifpur	45	...	...	45	...	...	
	Naoabad	...	16	...	16	...	...	
	Total	1,109	1,356	2,015	450	...	...	

Hyderabad ..	Lakhat	12	...		12	...		...	...	12	Do.	do.
	Nasri	265	...		265	...		...	...	265	Do.	do.
	Mehrabpur	216	...		216	...		...	...	216	Do.	do.
	Mari	2,720		7	2,720		7	...	...	2,720	Do.	do.
	Keti Jurio	640	...		640	...		...	...	640	Do.	do.
	Nurketi	1,120		320	1,120		320	...	...	1,120	Do.	do.
	Mud	...		166	...		166	...	...			
	Khanote	220	...		220	...		...	...	220	Do.	do.
	Jakhri	140	...		140	...		...	...	140	Do.	do.
	Matari	2,000	...		1,680		320	...	...	1,680	Do.	do.
	Miani	-2,598	...		1,958		640	...	...	1,958	Do.	do.
	Mahamed Khan	181	...		...		181	...	...			
	Butto	1,280		160	...		1,440	...	...			
	Manjhand	108	...		...		108	...	...			
	Unarpur	3,150		640	3,150		640	...	...	3,150	Do.	do.
	Shahmakai	43	...		...		43	...	...			
	Jamshoro	23	...		...		23	...	...			
	Total	14,716		1,293	12,121		3,888	...	...			
Jerruck ...	Mulchand	214		15	...		229	...	...			
	Khadi	1,921		85	...		2,006	...	...			
	Penah	13	...		...		13	...	...			
	Ganj	15	...			15	...	...	...	15	Do.	do.
	Laikpur	160		117	160		117	...	...	160	Do.	do.
	Viran	735		50	...		785	...	...			
	Gharko	436		125	...		561	...	...			
	Shahlonko	100		31	...		131	...	..			
	Lalang	...		15	...		15	...	...			
	Sonda	55		24	...		79	...	...			
	Hilaya	165		32	...		197	...	...	495	Do.	do.
	Tikhur	...		24	...		24	...	...			
	Khathar	505		55		495	65	...	...			
	Katiar	12		12	...		24	...	...			
	Budka Takar	82	...		...		82	...	...			
	Khatro	...		250	...		250	...	...			
	Total	4,413		835	670		4,578	...	...			

Hyderabad,
10th September 1888.

J. G. MACRAE, Colonel,
Conservator of Forests, Sind Circle.

FORM No. 54.

FOREST DEPARTMENT, SIND CIRCLE.

Outturn of Timber and Firewood during the year 1887-88.

Division.	Description of Material.	Outturn in Cubic feet.								Remarks.		
		Selection fellings.	Clearance.	Thinnings.	Total.	Removed by						
						Government Agency.	Purchasers.	Free grants.	Right holders.			
Sukkur Division ...	Babul logs	6,051	...	...	6,051	2,926	1,569	6	...			
	Bahan logs	9,074	...	...	9,074	4,598	1,693	538	...			
	Tali logs	818	...	...	818	144	132	...	...			
	Bahan dasas	923	...	...	923	314	171	...	...			
	Sireh logs	122	...	...	122	...	...	...	...			
	Ber logs	18	...	...	18	...	...	...	...			
	Babul posts	1,484	...	...	1,484	1,488	6	...	...	10 C. ft. removed out of last year's out-turn.		
	Bahan posts	9,246	...	...	9,246	5,464	130	8	...			
	Babul rafters	100	...	...	100	100	...	...	...	7,784	Do.	do.
	Bahan rafters	29,782	...	...	29,782	35,206	2,210	150	...			
	Babul cart axles	...	2,655	...	2,655	1,396	1,182	...	...	5	Do.	do.
	Jhau rafters	...	38,770	...	38,770	5	36,222	2,548	...	11	Do.	do.
	Tali pieces	...	...	65	65	11	65	...	...			
	Bahan pieces	...	...	175	175	...	175	...	...			
	Kandi logs	1,074	...	...	1,074	...	1,037	37	...			
	Jhau logs	245	...	...	245	...	245	...	...			
	Asri logs	18	...	...	18	...	18	...	...			
	Nim logs	7	...	...	7	...	7	...	...			
	Lai logs	442	...	...	442	...	38	404	...			
	Khabar logs	33	...	...	33	...	33	...	...			
	Kando posts	3	...	...	3	...	3	...	...			
	Kandi rafters	1,181	...	...	1,181	...	1,181	...	...			
	Props	499	...	...	499	...	...	499	...			
	Firewood	...	41,92,792	2,812	41,95,604	8,92,066	33,15,940	499	...	12,901	Do.	do.
	Locomotive fuel...	...	37,44,408	...	37,44,408	36,51,545	42,325	...	...			
	Charcoal	...	9,225	...	9,225	...	9,225	...	...			
Naushahra Division ...	Babul logs	2,436	...	...	2,436	1,162	953	251	...			
	Babul sleepers	...	...	...	...	91	...	...	...	91	Do.	do.
	Bahan logs	21	...	...	21	438	21	...	...	438	Do.	do.
	Lai logs	7	...	...	7	...	7	...	...			
	Ber logs	81	...	...	81	...	81	...	...			
	Kandi logs	360	...	...	360	11	349	...	...			
	Kandi pieces	15	...	...	15	15	...	...	...			
	Babul posts	1	...	...	1	1	...	...	...			

	Pahan posts	2,138	...	...	2,138	1,836	...	...	...				
	Bahan rafters	25,756	...	...	25,756	19,057	...	...	...				
	Kirir rafters	...	2,838	...	2,838	481	2,357	...	...				
	Jhau rafters	...	6,339	...	6,339	3,633	1,156	1,100	...				
	Jhau bairs	...	1	...	1	...	1	...	...				
	Firewood	...	3,26,936	...	3,26,936	84,274	2,96,278	...	...	1,10,225	Do.	do.	
	Locomotive fuel...	...	20,39,200	...	20,39,200	21,49,425	...	...	...	3,204	Do.	do.	
	Charcoal	...	22,702	...	22,702	25,456	450	...	...				
Hyderabad Division ...	Babul logs	11,538	...	...	11,538	3,207	2,911	210	....				
	Babul bolsters	2,150	....	...	2,150	2,030	...	...	...				
	Babul sleepers	16,450	...	...	16,450	17,461	...	...	...	1,011	Do.	do.	
	Babul slabs	366	...	...	366	3	...	...	...				
	Babul rafters	17	...	...	17	14	...	...	...				
	Babul planks	43	...	...	43	19	....	...	...				
	Bahan posts	4,958	...	...	4,958	2,489	1,956	...	...				
	Bahan rafters	61,349	...	...	61,349	69,344	5,095	545	...	3,635	Do.	do.	
	Jhau rafters	2,137	...	...	2,137	1,100	862	175	...				
	Jhau posts	46	...	...	46	...	...	...	...				
	Kirir rafters	1,630	...	...	1,630	1,550	...	...	...				
	Bahan dasas	7	...	...	7	7	...	...	...				
	Bahan pieces	750	...	...	750	750	...	...	...				
	Jhau bairs	30	...	...	30	...	29	1	...				
	Firewood	...	16,17,286	...	16,17,286	12,59,503	1,58,733	...	...				
	Locomotive fuel...	...	13,71,933	...	13,71,933	13,71,933	...	...	...				
	Charcoal	...	64,462	...	64,462	50,544	...	...	...				
Jerruck Division ..	Babul logs	13,037	...	...	13,037	11,342	...	...	...				
	Babul pieces	...	487	...	487	...	....	487	...				
	Babul posts	...	386	...	386	63	374	...	...	51	Do.	do.	
	Jhau posts	...	477	...	477	93	384	...	...				
	Jhau rafters	...	825	...	825	...	425	400	...				
	Babul bolsters	1,180	..	...	1,180	1,109	...	...	...				
	Bahan rafters	....	950	...	950	500	...	...	...				
	Kandi logs	...	200	...	200	64	...	...	...				
	Babul rafters	...	289	...	289	...	289	...	...				
	Babul slabs	...	450	...	450	50	...	50	...				
	Jhau bairs	...	4	...	4	...	4	...	...				
	Firewood	...	10,92,561	...	10,92,561	8,97,338	27,992	...	...	10,521	Do.	do.	
	Charcoal	...	1,17,841	...	1,17,841	1,28,362	...	...	...	62,817	Do.	do.	
	Locomotive fuel.	...	6,04,121	...	6,04,121	6,66,938	...	...	...				

Cubical contents of Charcoal is given according to actual weight per C. ft. as ascertained by weighing and measuring a certain quantity.

Hyderabad,
10th September 1895.

J. G. MACRAE, Colonel,
Conservator of Forests, Sind Circle.

FORM No. 55.

FOREST DEPARTMENT, SIND CIRCLE.

Outturn of Minor Forest produce.

Division.	Description of produce.	Produce removed or utilized										Remarks.
		By Government agency.		By purchasers.		By Free grant.		By right holders.		Total.		
		Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	
	Reserved Forests.											
Sukkur	Kanh grass	...	...	498	33	84	5	...	...	582	38	
	Reed	...	...	55	11	10	1	...	...	65	12	
	Do.	...	...	Contract.	390	...	...	...	...	...	390	
	Jhau brushwood	...	...	450	231	137	9	...	...	587	240	
	Babul bark	...	...	188	45	...	...	...	...	188	45	
	Babul pods	...	...	Contract.	376	...	...	...	...	...	376	
	Branches of trees	...	...	...	36	...	...	...	...	...	36	
	Grass	...	...	330	31	...	...	...	...	330	31	
	Reed and Munj grass	...	...	Contract.	62	...	...	...	...	...	62	
	Sur and do.	...	...	Do.	151	...	...	...	...	...	151	
	Fruit	...	288	...	...	...	...	...	...	...	288	
	Grazing fees	...	...	...	17,268	...	...	...	...	...	17,268	
	Total	...	288	1,521	18,634	231	15	...	...	1,752	18,937	
Naushahro	Babul pods	...	...	Contract.	1,633	...	...	...	...	...	1,633	
	Sur and reed grass	...	...	Do.	404	...	...	...	...	...	404	
	Do.	...	...	89	7	...	...	...	...	89	7	
	Kanh grass	32	3	28	2	...	...	...	...	60	5	
	Ber fruit	...	...	Contract.	16	...	...	...	...	...	16	
	Babul bark	...	...	115	14	...	...	...	...	115	14	
	Brushwood	16	1	14	1	...	...	...	...	30	2	
	Babul seed	1	1	...	...	...	...	...	...	1	1	
	Tooth brushes	...	...	2	1	...	...	...	...	2	1	
	Branches of trees	...	...	...	9	...	...	...	...	...	9	
	Grazing fees	...	...	...	8,135	...	...	...	...	...	8,135	
	Total	49	5	248	10,222	...	...	...	...	297	10,227	

Hyderabad	Brushwood	...	...	186	12	...	...	...	...	186	12
	Babul seed	250	359	...	...	...	...	...	...	250	359
	Kanh grass	...	...	578	156	84	5	...	...	662	161
	Bajri grass	...	3	...	...	...	...	...	...	...	3
	Tooth brushes	...	...	98	32	...	...	...	...	98	32
	Babul bark	...	...	...	7	...	...	...	...	...	7
	Branches of trees	...	...	...	136	...	...	...	...	...	136
	Lotus	...	...	Contract.	48	...	...	...	...	...	48
	Lac	...	...	Do.	756	...	...	...	...	...	756
	Fruit	...	...	Do.	275	...	...	...	...	...	275
	Grazing fees	...	...	...	14,731	...	...	...	...	...	14,731
	Babul pods	...	...	Contract.	6,952	...	...	...	...	...	6,952
	Total	250	362	862	23,105	84	5	...	...	1,196	23,472
Jerruck	Brushwood	...	...	128	8	...	...	...	...	128	8
	Kanh grass	...	...	151	10	...	...	...	...	151	10
	Kamah	...	...	52	3	...	...	...	...	52	3
	Potash	...	...	137	34	...	...	...	...	137	34
	Fruit	...	...	...	237	...	...	...	...	...	237
	Grazing fees	...	...	...	12,830	...	...	...	...	...	12,830
	Fudder grass	...	...	...	25	...	...	...	...	...	25
	Babul pods	...	...	Contract.	2,914	...	...	...	...	...	2,914
	Babul bark	227	178	...	...	...	...	...	...	227	178
	Babul branches	...	...	...	4	...	...	...	...	...	4
	Babul seed	53	101	...	...	...	...	...	...	53	101
	Total	280	279	468	16,065	...	...	...	...	748	16,344

Hyderabad,
10th September 1888.

J. G. MACRAE, Colonel,
Conservator of Forests, Sind Circle.

ANNUAL FORM No. 56.

FOREST DEPARTMENT, SIND CIRCLE.

Account of Timber and other Produce cut or collected by Government agency and brought to Sale Depôts or sold locally during the Year 1887-88.

	Particulars.	No. or quantity.	Cubic feet.	Total of each head. No. or quantity.	Total of each head. Cubic feet.
	TIMBER.				
	Balance at the commencement of the year.				
	Sale Depots.				
Sukkur Division.	Babul logs	307	3,228		
	Bahan logs	211	1,180		
	Tali logs	57	287		
	Babul posts	16	...		
	Bahan posts	4,559	...		
	Bahan rafters	17,623	...		
	Babul cart axles	507	...		
	Tali pieces	37	...		
	Bahan dasas	8	13		
	Jhau rafters	10	...		
				23,335	4,708
	Forest Depots.				
	Babul logs	3	13		
	Babul sleepers	290	...		
	Bahan posts	100	...		
	Bahan rafters	8,560	...		
	Jhau rafters	1,014	...		
				9,967	13
	Sale Depots.				
Naushehro Division.	Bahan logs	50	438		
	Babul sleepers	54	...		
	Bahan posts	95	...		
	Bahan rafters	17	...		
	Jhau rafters	1,000	..		
				1,216	438
	Forest Depots.				
	Babul logs	86	...		
	Bahan logs	7	93		

	Particulars.	No. or quantity.	Cubic feet.	Total of each head. No. or quantity.	Total of each head. Cubic feet.
	TIMBER.				
	Removed by Purchasers from Depots.				
	Babul logs	909	14,540		
	Do.	1	...		
	Bahan logs	594	4,776		
	Tali logs ...	14	144		
	Babul bolsters	899	3,139		
	Babul planks	17	...		
	Bahan dasas	70	314		
	Do.	7	...		
	Babul sleepers	2,000	...		
	Babul posts	2,482	...		
	Bahan posts	15,315	...		
	Bahan rafters	2,17,904	...		
	Babul rafters	214	...		
	Jhau rafters	3,510	...		
	Kirir rafters	3,100	...		
	Babul cart axles	2,792	...		
	Bahan pieces	1,500	...		
	Babul outer slabs	5	...		
	Tali pieces	37	...		
				2,51,970	22,913
	Sold Locally.				
	Babul logs	368	2,935		
	Do.	277	...		
	Bahan logs	20	260		
	Kandi logs	16	11		
	Babul sleepers	2,701	...		
	Jhau posts	150	...		
	Babul posts	22	...		
	Bahan posts	475	...		

	Sale Depots.				
Hyderabad Division.	Babul logs	50	691		
	Babul bolsters	175	824		
	Babul planks	5	...		
	Babul outer slabs	2	...		
	Babul sleepers	286	...		
	Kirir knees	50	...		
	Bahan posts	750	...		
	Bahan rafters	69,370	...	70,688	1,515
	Forest Depots.				
	Babul logs	26	125		
	Do.	6	...		
	Babul sleepers	8	...		
	Babul outer slabs	200	...	240	125
	Sale Depots.				
Jerruck Division.	Babul logs	183	2,095		
	Babul posts	1,438	...		
	Jhau posts	271	...		
	Jhau rafters	13	...	1,905	2,095
	Forest Depots.				
	Babul logs	417	985		
	Bahan posts	200	...	617	985
	Total Balance... ..	...	...	1,08,061	...

Bahan rafters	30,291	...		
Kirir rafters	963	...		
Jhau rafters	5,965	...		
Kandi pieces	30	...		
Babul outer slabs	100	...	41,378	3,206
Converted in Sale Depots.				
Babul bolsters	22	104		
Kandi logs	16	...	38	104
Used by Department.				
Bahan logs	3	45		
Babul planks	5	...		
Bahan rafters	20	...	28	45
Transfer to other Depots.				
Babul planks	17	...		
Babul rafters	14	...	31	...
Converted in Forest Depots.				
Babul logs	250	1,190		
Do.	86	...		
Bahan logs	7	...	343	1,190
Written off Forest Depot.				
Babul logs	112	744		
Bahan posts	200	...	312	744

Received from Forests in Sale Depots.

Babul logs	1,451	19,467		
Do.	22	...		
Bahan logs	760	6,583		
Tali logs ...	82	686		
Sireh logs	11	122		
Kandi logs	50	...		
Ber logs ...	1	18		
Babul bolsters	939	3,330		
Bahan dasas	201	752		
Do.	7	...		
Babul sleepers	290	...		
Do.	1,999	...		
Babul cart axles	2,947	...		
Jhau posts	74	...		
Babul posts	2,384	...		
Bahan posts	22,506	...		
Bahan rafters	1,89,384	...		
Babul rafters	200	...		
Jhau rafters	4,400	...		
Kirir rafters	3,261	...		
Bahan pieces	1,500	...		
Tali pieces	...	...		
Babul outer slabs	711	...		
			2,33,180	30,958

Received in Forest Depots.

Babul logs	344	6,440		
Do.	305	...		
Bahan logs	20	260		
Kandi logs	16	11		
Babul sleepers	2,701	...		
Jhau posts	150	...		
Babul posts	22	...		

Transferred from Forests to Sale Depots.

Babul logs	10	82		
Babul sleepers	294	...		
Bahan posts	100	...		
Bahan rafters	8,540	...		
Jhau rafters	1,014	...		
Babul outer slabs	200	...		
			10,158	82

BALANCE AT CLOSE OF THE YEAR.

Sale Depots.

Sukkur Division. Babul logs	644	4,778		
Bahan logs	424	3,380		
Tali logs...	125	829		
Sireh logs	11	122		
Ber logs ...	1	18		
Bahan dasas	139	451		
Bahan posts	10,437	...		
Bahan rafters	2,055	...		
Babul cart axles	662	...		
			14,423.	9,578

Forest Depots.

Bahan rafters	20	...	20	...

Sale Depots.

Naushahro Division. Babul logs	20	...		
Babul sleepers	28	...		
Bahan posts	580	..		
Bahan rafters	13,415	...		
Jhau rafters	1,900	...		
			15,943	...

Forest Depots.

Babul logs	20	...	20	...

Bahan posts	475	...			
Bahan rafters	30,291	...			
Kirir rafters	963	...			
Jhau rafters	5,965	...			
Kandi pieces	30	...			
Babul outer slabs	22	...			
			41,304	6,711	
Received by Conversion in Sale Depots.					
Babul planks	86	...			
Babul rafters	34	...			
			120	...	
Received by Conversion in Forest Depots.					
Babul logs	250	1,190			
Babul outer slabs	800	...			
			1,050	1,190	
Total Timber	...	...	3,83,715	48,738	

FIREWOOD AND CHARCOAL, &c.

BALANCE AT THE COMMENCEMENT OF THE YEAR.

Sukkur Division.	*Sale Depots.*					
	Firewood	Mds.	64,495	...		
	Babul bark	,,	6	...		
	Locomotive fuel	C. feet.	...	11,227		
					64,501	11,227
	Forest Depots.					
	Firewood	Mds.	1,725	...		
	Locomotive fuel	C. feet.	...	1,75,775		
					1,725	1,75,778
Hyderabad Division.	*Sale Depots.*					
	Babul logs		417	5,934		
	Do.		1	...		
	Kandi logs		34	...		
	Babul planks		52	...		
	Babul bolsters		193	911		
	Babul sleepers		1	...		
	Babul outer slabs		708	...		
	Jhau posts		74	...		
	Bahan posts		1,578	...		
	Bahan rafters		43,000	...		
	Kirir rafters		161	...		
	Babul rafters		6	...		
	Kirir knees		50	...		
					46,275	6,845
	Forest Depots.					
	Babul logs		11	...		
	Babul sleepers		4	...		
	Babul outer slabs		22	...		
					37	...
Jerruck Division.	*Sale Depots.*					
	Babul logs		21	229		
	Babul posts		1,356	...		
	Jhau posts		271	...		
	Jhau rafters		13	...		
					1,661	229
	Forest Depots.					
	Babul logs		303	3,802		
	Babul outer slabs		700	...		
					1,003	3,802
Total Timber...			...	...	3,83,715	48,738

FIREWOOD AND CHARCOAL, &c.

Removed by Purchasers from Sale Depots.

Firewood	Mds.	0,25,958	...	
Charcoal...	,,	1,446	...	
Locomotive fuel	C. fuel.	...	9,67,535	
Babul bark	Mds.	6	...	
Babul seed	,,	326	...	
			3,27,736	9,67,535

		Sale Depots.								*Sold Locally.*					
Naushahro Division.	Firewood	... ...	Mds.	7,197	...	7,197	...		Firewood	Mds.	1,20,861	...		
		Forest Depots.							Charcoal	„	43,274	...		
	Firewood	... ...	Mds.	9,021	...				Locomotive fuel	C. ft.	...	68,72,306		
	Locomotive fuel	... ...	C. ft.	...	2,73,675				Kanh grass	Bundles.	32	...		
	Charcoal	... ...	Mds.	711	...	9,732	2,73,675		Jhau brushwood	„	16	...		
		Sale Depots.							Babul seed	Mds.	481	...		
Hyderabad Division.	Firewood	... ...	Mds.	28,654	...				Babul bark	„	227	...		
	Charcoal	... ...	„	6	...				Nim seed	„	2	...	1,64,893	68,72,306
	Babul seed	... ...	„	139	...	28,799	...		*Transferred to other Sale Depots.*					
		Forest Depots.							Firewood...	Mds.	2,100	...	2,100	...
	Firewood	... ...		9,805	...				WRITTEN OFF.					
	Locomotive fuel	... ...		...	5,250	9,805	5,250		*Sale Depots.*					
		Sale Depots.							Firewood...	Mds.	50	...	50	...
Jerruck Division.	Firewood	... ...	Mds.	188	...				*Forest Depots.*					
	Charcoal	... ...	„	93	...				Firewood...	Mds.	2,063	12,000		
	Babul seed	... ...	„	3	...	284	...		Locomotive fuel	C. ft.	...	...		
		Forest Depots.							Charcoal	Mds.	694	...	2,757	12,000
	Firewood	... ...	Mds.	34,574	...				*Transferred from Forests to Depots.*					
	Locomotive fuel	... ...	C. ft.	...	1,49,185				Locomotive fuel	C. ft.	...	1,31,913		
	Charcoal	... ...	Mds.	3,221	...				Firewood	Mds.	8,806	...	8,806	1,31,913
	Babul seeds	... ...	„	1,000	...	38,795	1,49,185		*Converted in Forest Depots.*					
									Firewood		2,808	...	2,808	...
									Used by Department.					
	Total Balance	...	...	...	...	1,60,838	6,15,115		Firewood	Mds.	1,575	...	1,575	...

Received from Forests in Sale Depots.					
Firewood	Mds.	3,51,475	...		
Charcoal...	"	1,546	...		
Locomotive fuel	C. ft.	...	9,60,959		
Babul seed	Mds.	350	...	3,53,371	9,60,959
Received in Forest Depots.					
Firewood	Mds.	1,57,479	...		
Charcoal...	"	43,202	...		
Locomotive fuel	C. ft.	...	67,54,843		
Kanh grass	Bundles.	32	...		
Jhau brushwood	"	16	...		
Babul seeds	Mds.	69	...		
Babul bark	"	227	...		
Nim seed	"	2	...	2,01,027	67,54,853
Received by Transfer from other Depots.					
Firewood...		2,100	...	2,100	...
Received by Conversion in Forest Depots.					
Locomotive fuel	C. ft.	...	1,525		
Charcoal...	Mds.	710	...	710	1,525
Total Firewood and Charcoal, &c. ...		...	...	7,18,046	83,32,452

BALANCE AT CLOSE OF THE YEAR.						
Sale Depots.						
Sukkur Division.	Firewood	Mds.	49,202	...		
	Locomotive fuel	C. ft.	...	3,403	49,202	3,403
Forest Depots.						
	Firewood	Mds.	15,427	...		
	Locomotive fuel	C. ft.	...	90,227	15,427	90,227
Sale Depots.						
Naushahro Division.	Firewood	Mds.	3,309	...	3,309	...
Forest Depots.						
	Firewood	Mds.	4,970	...		
	Locomotive fuel	C. ft.	...	1,63,450	4,970	1,63,450
Sale Depots.						
Hyderabad Division.	Firewood	Mds.	73,334	...		
	Charcoal	"	199	...		
	Locomotive fuel	C. ft.	...	1,248		
	Babul seed	Mds.	166	...	73,699	1,248
Forest Depots.						
	Firewood	Mds.	1,473	...		
	Charcoal	"	2,900	...		
	Locomotive fuel	C. ft.	...	5,250	4,373	5,250
Sale Depots.						
Jerruck Division.	Firewood	Mds.	156	...	156	...
Forest Depots.						
	Firewood	Mds.	54,621	...		
	Charcoal	"	976	...		
	Babul seed	"	588	...		
	Locomotive fuel	C. ft.	...	85,120	56,185	85,120
Total firewood and Charcoal, &c. ...			...	...	7,18,046	83,32,452

Hyderabad,
10th September 1888.

J. G. MACRAE, Colonel,
Conservator of Forests, Sind Circle.

FORM No. 57.

Forest Department Sind Circle.

Abstract showing the Value of Timber and other Produce at Sale Depôts for the year 1887-88.

	Description of Timber and other Produce.	On hand at commencement of the year.			On hand at close of the year.			Difference in Value.	
		No.	Cubic feet.	Value.	No.	Cubic feet.	Value.	In favor of the year.	Against the year.
Sukkur Division.	*Sale Depots.*								
	Babul logs	307	3,228	1,614	644	4,778	2,389	...	...
	Bahan logs	211	1,180	590	424	3,380	1,680	...	...
	Tali logs	57	287	215	125	829	233	...	...
	Sireh logs	...	...	...	11	122	27	...	...
	Ber logs	...	...	...	1	18	3	...	...
	Babul posts	16	...	6	...	...	...	...	...
	Bahan posts	4,559	...	1,824	10,437	...	4,175	...	...
	Bahan rafters	17,623	...	2,115	2,055	...	239	...	...
	Babul cart axles	507	...	81	662	...	38	...	...
	Tali pieces	37	...	18	...	...	...	...	...
	Bahan dases	8	13	6	139	451	104	...	...
	Jhau rafters	10	...	1	...	...	...	...	...
	Total timber...	23,335	4,708	6,470	14,498	9,578	8,888	2,418	...
	Forest Depots.								
	Babul logs	3	13	3	...	...	...	...	...
	Babul sleepers	290	...	203	...	...	...	...	...
	Bahan posts	100	...	10	...	...	...	...	...
	Bahan rafters	8,560	...	906	20	...	2	...	...
	Jhau rafters	1,014	...	20	...	...	...	...	...
	Total timber...	9,967	13	1,142	20	...	2	...	1,140
	Sale Depots.								
	Firewood ... Mds...	64,495	...	11,609	49,202	...	8,856	...	...
	Babul bark ... Mds...	6	...	3	...	...	...	...	...
	Locomotive fuel ... C. ft...	...	11,227	674	...	3,403	174	...	...
	Total firewood...	64,501	11,227	12,286	49,202	3,403	9,030	...	3,256
	Forest Depots.								
	Firewood ... Mds...	1,725	...	311	15,427	...	2,777	...	...
	Locomotive fuel ... C. ft...	...	1,75,778	6,997	...	90,227	3,338	...	...
	Total firewood...	1,725	1,75,778	7,308	15,427	90,227	6,115	...	1,193
Naushahro Division.	*Sale Depots.*								
	Bahan logs	50	438	110	...	...	...	...	...
	Babul sleepers	54	...	89	28	...	50	...	...
	Bahan posts	95	...	15	580	...	94	...	...
	Bahan rafters	17	...	1	13,415	...	1,362	...	...
	Jhau rafters	1,000	...	35	1,900	...	66	...	...
	Babul logs	...	...	...	20	...	2	...	...
	Total timber...	1,216	438	250	15,943	...	1,574	1,324	...
	Forest Depots.								
	Bahan logs	7	...	1	...	...	...	...	...
	Babul logs	86	...	10	20	...	15	...	...
	Total...	93	...	11	20	...	15	4	...
	Sale Depot.								
	Firewood ... Mds...	7,197	...	1,439	3,309	...	596	...	843
	Forest Depots.								
	Firewood ... Mds...	9,021	...	912	4,970	...	311	...	...
	Locomotive fuel ... C. ft ...	...	2,73,675	9,499	...	1,63,450	5,230	...	...
	Charcoal ... Mds...	711	...	284	...	...	...	...	...
	Total firewood...	9,732	2,73,675	10,695	4,970	1,63,450	5,541	...	5,154

	Description of Timber and other Produce.	On hand at commencement of the year.			On hand at close of the year.			Difference in Value.	
		No.	Cubic feet.	Value.	No.	Cubic feet.	Value.	In favor of the year.	Against the year.
Hyderabad Division.	*Sale Depots.*								
	Babul logs	50	691	519	417	5,934	4,450	...	...
	Babul logs	...	...	...	1	...	6	...	...
	Bahan posts	750	...	300	1,578	...	631	...	...
	Bahan rafters	69,370	...	7,632	43,000	...	4,730	...	...
	Babul sleepers	286	...	644	1	...	3	...	...
	Babul outer slabs	2	...	1	708	...	140	...	...
	Babul planks	5	...	3	52	...	26	...	...
	Jhau posts	...	...	...	74	...	6	...	...
	Babul bolsters	175	824	603	193	911	1,139	...	...
	Babul rafters	...	...	...	6	...	1	...	...
	Kirir knees	50	...	3	50	...	3	...	...
	Kirir rafters	...	...	...	161	...	6	...	...
	Kandi logs	...	...	...	34	...	17	...	...
	Total timber...	70,688	1,515	9,705	46,275	6,845	11,158	1,453	...
	Forest Depots.								
	Babul logs	26	125	26	...	...	...	...	...
	Babul logs	6	...	3	11	...	8	...	...
	Babul sleepers	8	...	18	4	...	8	...	...
	Babul outer slabs	200	...	20	22	...	2	...	...
	Total timber...	240	125	67	37	...	18	...	49
	Sale Depots.								
	Firewood ... Mds...	28,654	...	5,158	73,334	...	13,194	...	...
	Locomotive fuel ... C. ft...	...	...	...	...	1,248	62	...	...
	Charcoal ... Mds...	6	...	3	199	...	112	...	...
	Babul seed	139	...	69	166	...	83	...	...
	Total firewood, &c...	28,799	...	5,230	73,699	1,248	13,451	8,221	...
	Forest Depots.								
	Firewood ... Mds...	9,805	...	981	1,473	...	148	...	...
	Charcoal	...	...	...	2,900	...	815	...	...
	Locomotive fuel	...	5,250	115	...	5,250	115	...	...
	Total...	9,805	5,250	1,096	4,373	5,250	1,078	...	18
Jerruck Division.	*Sale Depots.*								
	Babul logs	183	2,095	1,309	21	229	86	...	...
	Babul posts	1,438	...	144	1,356	...	68	...	...
	Jhau posts	271	...	33	271	...	14	...	...
	Jhau rafters	13	...	1	13	...	1	...	...
	Total timber...	1,905	2,095	1,487	1,661	229	169	...	1,318
	Forest Depots.								
	Babul logs	417	985	123	303	3,802	475	...	...
	Bahan posts	200	...	10	...	...	...	...	...
	Babul outer slabs	...	...	...	700	...	44	...	...
	Total...	617	985	133	1,003	3,802	519	386	...
	Sale Depots.								
	Firewood ... Mds...	188	...	34	156	...	28	...	...
	Charcoal ... „ ...	93	...	47	...	...	...	...	...
	Babul seed ... „ ...	3	...	2	...	...	...	...	...
	Total firewood, &c...	284	...	83	156	...	28	...	55
	Forest Depots.								
	Firewood ... Mds...	34,574	...	4,149	54,621	...	6,554	...	...
	Charcoal ... „ ...	3,221	...	1,160	976	...	351	...	...
	Babul seed ... „ ...	1,000	...	500	588	...	294	...	...
	Locomotive fuel	...	1,49,185	3,714	...	85,120	2,571	...	...
	Total...	38,795	1,49,185	9,523	56,185	85,120	9,770	247	...

Net Difference in favor of the year Rs. 1,027.

Hyderabad,
10th September 1888.

J. G. MacRAE, Colonel,
Conservator of Forests, Sind Circle.

ANNUAL FORM No. 58.

FOREST DEPARTMENT, BOMBAY, SIND CIRCLE.

Summary of Revenue and Expenditure of the different Divisions during the year 1887-88.

BUDGET HEADS.	Direction.	Jerruck Division.	Sukkur Division.	Hyderabad Division.	Naushahro Division.	Total during 1887-88.
REVENUE.						
I. TIMBER AND OTHER PRODUCE REMOVED FROM THE FORESTS BY GOVERNMENT AGENCY—						
a. Timber	...	14,831 11 9	20,143 9 8	35,236 2 11	3,711 7 2	73,922 15 6
b. Firewood and Charcoal	...	70,808 1 11	1,67,452 9 5	91,289 1 10	89,680 6 4	4,19,430 3 6
c. Bamboos	...	...	...	...	...	...
d. Sandalwood	...	...	...	...	...	...
e. Grass and other minor produce	...	278 6 8	287 15 6	362 0 9	5 0 0	933 6 11
II. TIMBER AND OTHER PRODUCE REMOVED FROM THE FORESTS BY CONSUMERS OR PURCHASERS—						
a. Timber	...	912 9 11	4,709 4 6	1,322 2 0	325 2 0	7,269 2 5
b. Firewood and Charcoal	...	432 2 2	30,034 4 4	1,556 15 11	2,752 9 0	34,775 15 5
c. Bamboos	...	...	...	...	...	...
d. Grazing and fodder Grass	...	12,854 11 0	17,267 12 8	14,731 5 0	8,135 2 0	52,988 14 8
e. Other minor produce	...	3,210 4 3	1,365 14 1	8,373 13 0	2,087 4 6	15,037 3 10
III. CONFISCATED, DRIFT AND WAIF WOOD	...	...	1 0 0	1 2 6	0 1 0	2 3 6
IV. REVENUE FROM FORESTS NOT MANAGED BY GOVERNMENT—						
a. Duty on Foreign Timber and other Forest produce	...	...	...	...	...	...
b. Revenue from shared and private forests	...	...	...	...	...	...
V. MISCELLANEOUS—						
a. Fines and forfeitures	...	...	27 0 0	...	...	27 0 0
b. Refunds	...	14 10 8	333 5 10	...	1 4 6	349 5 0
c. Other sources	3 0 0	4,700 4 10	10,206 9 2	4,802 7 6	7,853 1 10	27,565 7 4
Total Revenue	3 0 0	1,08,042 15 2	2,51,829 5 2	1,57,675 3 5	1,14,751 6 4	6,32,301 14 1
EXPENDITURE.						
A. CONSERVANCY AND WORKS.						
I. TIMBER AND OTHER PRODUCE REMOVED FROM THE FORESTS BY GOVERNMENT AGENCY—						
a. Timber	...	9,391 15 11	6,535 10 1	15,995 0 3	1,547 14 7	33,470 8 10
b. Firewood and Charcoal	...	48,079 8 8	1,21,323 3 8	72,922 13 4	64,922 8 4	3,07,248 2 0
c. Bamboos	...	...	...	...	...	...
d. Sandalwood	...	...	...	...	...	...
e. Grass and other minor produce	...	216 8 0	0 14 0	425 7 5	27 4 0	670 1 5
II. TIMBER AND OTHER PRODUCE REMOVED FROM THE FORESTS BY CONSUMERS OR PURCHASERS.	...	2 10 0	...	3 7 0	5 10 0	11 11 0
III. CONFISCATED, DRIFT AND WAIF WOOD	...	...	...	...	...	...
IV. REVENUE FORESTS NOT MANAGED BY GOVT.—						
a. Duty on foreign Timber and other Forest produce	...	...	...	...	...	...
b. Revenue from shared and private Forests	...	...	...	...	...	...
V. RENT OF LEASED FORESTS AND PAYMENTS TO SHAREHOLDERS IN FORESTS MANAGED BY GOVT.	...	...	...	...	...	...
VI. LIVE STOCK, STORES, TOOLS AND PLANT—						
a. Purchase of Cattle	...	...	...	...	...	...
b. Feed and keep of Cattle	...	94 12 0	159 10 10	99 7 10	...	353 14 8
c. Stores, Tools and Plant	...	7 4 0	124 9 1	535 8 9	...	664 5 10
VII. COMMUNICATIONS AND BUILDINGS—						
a. Roads and Bridges	...	...	...	...	...	...
b. Buildings	...	25 0 0	78 0 0	38 4 0	215 6 0	356 10 0
c. Other Works	...	...	50 6 11	...	...	50 6 11
VIII. DEMARCATION, IMPROVEMENT AND EXTENSION OF FORESTS—						
a. Demarcation	...	1 3 0	19 14 3	...	2,312 9 2	2,333 10 5
b. Compensation for Land and Rights	...	...	...	...	...	...
c. Surveys and Working Plans	...	2,363 13 6	621 15 0	227 2 8	362 4 0	3,575 3 3
d. Plantations	...	582 2 8	2,142 6 4	1,117 13 4	...	3,842 6 4
e. Protection from Fire	...	...	23 0 10	...	...	23 0 10
f. Other Works	...	270 0 3	153 15 1	1,008 0 8	714 5 0	2,146 5 0
IX. MISCELLANEOUS—						
a. Refunds	...	...	...	...	...	...
b. Law Charges	...	...	...	...	...	...
c. Other Charges	...	4 4 0	4 2 0	230 0 0	...	238 6 0
TOTAL A CONSERVANCY AND WORKS	...	61,039 2 0	1,31,234 12 1	92,603 1 3	70,107 13 1	3,54,984 12 5
B. ESTABLISHMENTS.						
I. SALARIES—						
a. Conservators	15,000 0 0	...	...	...	...	15,000 0 0
b. Superior Officers	...	9,862 1 8	3,939 13 5	10,955 15 4	2,895 0 0	27,652 14 5
c. Subordinate Forest & Depôt Establishments	...	5,665 1 1	15,891 14 8	8,676 4 2	7,830 6 9	38,063 10 8
d. Office Establishments	3,420 1 7	1,295 12 0	1,922 4 7	1,537 2 6	1,352 12 2	9,528 0 10
e. Deputation and Special Allowances	119 0 0	...	...	...	...	119 0 0
II. TRAVELLING ALLOWANCES—						
a. Conservators	2,400 0 0	...	...	...	...	2,400 0 0
b. Superior Officers	...	2,356 8 7	2,087 12 7	1,813 6 0	1,870 0 0	8,127 11 2
c. Subordinate Forest & Depôt Establishments	...	420 0 0	1,171 13 10	754 14 9	640 5 8	3,017 2 3
d. Office Establishments	902 4 3	430 3 0	715 5 9	540 0 0	460 10 1	3,048 7 1
III. CONTINGENCIES—						
a. Stationery	5 14 0	54 2 9	119 4 6	80 9 0	76 8 0	336 6 3
b. Carriage of Tents and Records	175 8 0	187 11 6	120 14 6	126 0 0	126 0 0	736 2 0
c. Rents, Rates and Taxes	300 0 0	253 11 4	128 0 0	240 0 0	240 0 0	1,161 11 4
d. Pay and Police Guards	...	...	...	...	...	...
e. Official Postage	130 2 0	141 1 6	427 3 6	90 4 6	200 0 0	988 11 6
f. Sundries	225 1 8	102 14 0	168 4 0	227 2 14	239 8 8	962 15 3
TOTAL B. ESTABLISHMENTS	22,677 15 6	20,769 3 5	26,692 11 4	25,071 11 2	15,931 3 4	1,11,142 12 9
GRAND TOTAL OF EXPENDITURE	22,677 15 6	81,808 5 5	1,57,927 7 5	1,17,674 12 5	86,039 0 5	4,66,127 9 3

No. F. / 12642

Forwarded to the Conservator of Forests, Sind Circle, under Section 238 of the Forest Code.

Bombay,
Dated 8th August 1888.

STEPHEN JACOB,
Accountant General.

FORM No. 59.

FOREST DEPARTMENT, BOMBAY, SIND CIRCLE.

Account Current for the year 1887-88.

To Cash Balance					2,599	12	9	By 1 Refunds and Drawbacks—							
„ VIII. Assessed Taxes—Income Tax...					1,250	2	1	Refunds Divided Heads—							
„ IX. Forests					6,32,301	14	1	Forest					1,339	6	0
„ XXII. Receipts in aid of superannuation, subscription to the Military Fund					414	0	0	„ 11 Forests					4,66,127	9	2
„ Revenue Deposits—Forests...					1,974	5	6	„ 19 Law and Justice—							
„ Advances Recoverable—								Jails—							
Forest advances	1,16,142	11	1	...				District Jails—							
Objection Book advances...	816	10	8	1,16,959	5	9		Contingencies					427	4	4
Cash Recoveries...	...			816	9	5		„ Revenue Deposits					2,094	15	6
„ Cheques and Bills, Departmental Cheques—								„ Advances Recoverable—							
Forests	...			4,66,662	1	6		Forest advances				1,12,328	12	3	
„ Forest Remittances—								Objection Book advances...				600	0	0	1,12,928	12	3
Remittances to Treasury	443	9	1	...				„ Cash Recoveries					...			816	9	5
Inter Divisional Transfers	7,364	1	4	...				„ Cheques and Bills—							
Inter Departmental Transfers	1,027	14	0	8,835	8	5		(Departmental Cheques)—							
„ Amount between Bombay and P. W. D. (Ordinary Branches)—								Forest					...			2,215	10	0
IV. Miscellaneous	...			0	14	5		„ 26 Scientific and other Minor Departments—							
								Experimental Farm—							
								Farming charges					...			810	0	0
								Forest Remittances—							
								Remittances to Treasuries				2,73,219	1	1	....		
								Inter Divisional Transfers				7,446	14	7	...		
								Inter Departmental Transfers				905	0	6	2,81,571	0	2
								Accounts Current—							
								Account between Bombay and Military, Bombay—							
								IV. Miscellaneous					...			20,516	0	3
								Account between Bombay and P. W. D., Bombay, Ordinary Branches—							
								IV. Items adjustable by P. W. D. Inter Departmental charges					...			1,505	4	6
								Account between Bombay and P. W. D., (Railway Branch)—							
								IV.—Items adjustable by P. W. D., (N. W. Railway) ...					...			3,38,801	2	0
								Account between Bombay and Marine—							
								IV. Items adjustable by Marine					...			173	0	0
								Cash Balance					..			2,488	0	4
Grand Total ...				12,31,814	9	11		Grand Total ...					...			12,31,814	8	11

No. $\frac{\text{F}}{12965}$

Forwarded to the Conservator of Forests, Sind Circle, under Section 238 of the Forest Code.

Accountant General's Office,
Bombay, 10th August 1888.

STEPHEN JACOB,
Accountant General.

ANNUAL FORM No. 60.

FOREST DEPARTMENT, BOMBAY, SIND CIRCLE.

Revenue received and Outstandings on account of Revenue during 1887-88.

Division.	Particulars.	Outstandings at commencement of year.	Value of Sales and other Revenue during year.	Total.	Amount realized during year.	Balance due to the Department at end of year.
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
Sukkur	I.—Timber and other produce removed from the forests by Government Agency—					
	(a) Timber	.....	20,143 9 8	20,143 9 8	20,143 9 8	.....
	(b) Firewood and Charcoal	.....	1,67,544 9 10	1,67,544 9 10	1,67,452 9 5	92 0 5
	(c) Grass and other minor produce	4 14 0	283 1 0	287 15 6	287 15 6	.....
	II.—Timber and other produce removed from the Forests by Consumers or Purchasers—					
	(a) Timber	.....	4,709 4 6	4,709 4 6	4,709 4 6	.....
	(b) Firewood and Charcoal	.....	30,203 0 4	30,203 0 4	30,034 4 4	168 12 0
	(d) Grazing and fodder grass	.....	17,267 12 8	17,267 12 8	17,267 12 8	.....
	(e) Other minor produce	.....	1,365 14 1	1,365 14 1	1,365 14 1	.....
	III.—Confiscated drifts and waif wood	.....	1 0 0	1 0 0	1 0 0	.....
	Total	4 14 0	2,41,518 4 7	2,41,523 2 7	2,41,262 6 2	260 12 5
Naushahra ...	I.—Timber and other produce removed from the Forests by Government Agency—					
	(a) Timber	.....	3,711 7 2	3,711 7 2	3,711 7 2	.....
	(b) Firewood and Charcoal	1,504 12 0	88,375 10 4	89,880 6 4	89,880 6 4	.....
	(c) Grass and other minor produce	.....	5 0 0	5 0 0	5 0 0	.....
	II.—Timber and other produce removed from the Forests by Consumers or Purchasers—					
	(a) Timber	.....	325 2 0	325 2 0	325 2 0	.....
	(b) Firewood and Charcoal	.....	2,752 9 0	2,752 9 0	2,752 9 0	.....
	(d) Grazing and fodder grass	.....	8,135 2 0	8,135 2 0	8,135 2 0	.....
	(e) Other minor produce	.....	2,087 4 6	2,087 4 6	2,087 4 6	.....
	III.—Confiscated drift and waif wood	.....	0 1 0	0 1 0	0 1 0	.....
	Total	1,504 12 0	1,05,892 4 0	1,06,897 0 0	1,06,897 0 0	.. ...

Hyderabad ...	I.—Timber and other produce removed from the Forests by Government Agency—																		
	(*a*) Timber	.....			35,407	7	2	35,407	7	2	35,236	2	11	171	4	3
	(*b*) Firewood and Charcoal	1,305	0	0	92,054	1	10	93,359	1	10	91,289	1	10	2,070	0	0
	(*c*) Grass and other minor produce	.....			362	0	9	362	0	9	362	0	9	.....		
	II.—Timber and other produce removed from the Forests by Consumers or Purchasers—																		
	(*a*) Timber	.....			1,322	2	0	1,322	2	0	1,322	2	0	.....		
	(*b*) Firewood and Charcoal	.....			1,556	15	11	1,556	15	11	1,556	15	11	.....		
	(*d*) Grazing and fodder grass	.....			14,731	5	0	14,731	5	0	14,731	5	0	.....		
	(*e*) Other minor produce	.....			8,373	13	0	8,373	13	0	8,373	13	0	.....		
	III.—Confiscated drifts and waif wood	.....			1	2	6	1	2	6	1	2	6	.....		
	Total	1,305	0	0	1,53,309	0	2	1,55,114	0	2	1,52,872	11	11	2,241	4	3
Jerruck	I.—Timber and other produce removed from the Forests by Government Agency—																		
	(*a*) Timber	1,041	4	0	14,831	11	9	15,872	15	9	14,831	11	9	1,041	4	0
	(*b*) Firewood and Charcoal	4,601	14	4	70,183	8	4	74,785	6	8	70,808	1	11	3,977	4	9
	(*c*) Grass and other minor produce	.....			278	6	8	278	6	8	278	6	8	.....		
	II.—Timber and other produce removed from the Forests by Consumers or Purchasers—																		
	(*a*) Timber	225	0	0	687	9	11	912	9	11	912	9	11	.....		
	(*b*) Firewood and Charcoal	20	0	0	432	2	2	452	2	2	432	2	2	20	0	0
	(*d*) Grazing and fodder grass	3	4	0	12,854	11	0	12,857	15	0	12,854	11	0	3	4	0
	(*e*) Other minor produce	.....			3,210	4	3	3,210	4	3	3,210	4	3	.....		
	III.—Confiscated drifts and waif wood	.....			.....			.....			.....			.....		
	Total	5,891	6	4	1,02,478	6	1	1,08,369	12	5	1,03,327	15	8	5,041	12	
Total Sind Circle..	I.—Timber and other produce removed from the Forests by Government Agency—																		
	(*a*) Timber	1,041	4	0	74,094	3	9	75,135	7	9	73,922	15	6	1,212	8	3
	(*b*) Firewood and Charcoal	7,411	10	4	4,18,157	14	4	4,25,569	8	8	4,19,430	3	6	6,139	5	2
	(*c*) Grass and other minor produce	4	14	0	928	8	11	938	6	11	933	6	11	.....		
	II.—Timber and other produce removed from the Forests by Consumers or Purchasers—																		
	(*a*) Timber	225	0	0	7,044	2	5	7,269	2	5	7,269	2	5	.....		
	(*b*) Firewood and Charcoal	20	0	0	34,944	11	5	34,964	11	5	34,775	15	5	188	12	0
	(*d*) Grazing and fodder grass	3	4	0	52,988	14	8	52,992	2	8	52,988	14	8	3	4	0
	(*e*) Other minor produce	.....			15,037	3	10	15,037	3	10	15,037	3	10	.....		
	III.—Confiscated drifts and waif wood	.....			2	3	6	2	3	6	2	3	6	.....		
	Grand Total	8,706	0	4	6,03,197	14	10	6,11,903	15	2	6,04,360	1	9	7,543	13	5

J. G. MACRAE, Colonel,
Conservator of Forests, Sind Circle.

FORM No. 61.

FOREST DEPARTMENT, BOMBAY, SIND CIRCLE.

Outstandings and Liabilities on account of Contractors and Disbursers for 1887-88.

Divisions.	Department Debtor			Department Creditor			Balance due		Remarks.
	At commencement of year.	Recoveries in cash and value of supplies and work done during year.	At close of year.	At commencement of year.	Payments made during year.	At close of year.	To Department (outstandings).	To Department (liabilities).	
Contractors.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
Jerruck	.....	11,839 0 0	11,839 0 0	3,775 0 0	10,864 0 0	14,639 0 0	2,800 0 0	.....	
Hyderabad	.....	25,029 8 6	25,029 8 6	1,509 0 0	23,529 8 6	25,029 8 6	.....	.....	
Naushahro	.....	.....	.....	.....	.....	.....	.....	.....	
Sukkur	.....	10,933 15 11	10,933 15 11	1,052 5 2	10,053 0 7	11,105 5 9	171 5 10	.....	
Total Contractors...	.....	47,802 8 5	47,802 8 5	6,327 5 2	44,446 9 1	50,773 14 3	2,971 5 10	.....	
Disbursers.									
Jerruck	.....	18,388 6 0	18,388 6 0	154 8 0	18,378 6 0	18,532 14 0	144 8 0	.....	
Hyderabad	.....	27,583 2 8	27,583 2 8	235 3 10	27,538 15 1	27,774 2 11	191 0 3	.....	
Naushahro	.....	7,044 0 2	7,044 0 2	.....	7,044 0 2	7,044 0 2	.....	.....	
Sukkur	.....	15,324 9 10	15,324 9 10	*1,572 12 2	14,920 13 11	16,493 10 1	1,169 0 3	.....	* Includes the closing balance of the Jacobabad Division which has been abolished.
Total Disbursers ...	.....	68,340 2 8	68,340 2 8	1,962 8 0	67,882 3 2	69,844 11 2	1,504 8 6	.....	
Grand Total ...	.....	1,16,142 11 1	1,16,142 11 1	8,289 13 2	1,12,328 12 3	1,20,618 9 5	4,475 14 4	.....	

No. F/12641

Forwarded to the Conservator of Forests, Sind Circle, with reference to paragraph 238 of the Forest Department Code.

Accountant General's Office,
Bombay, 8th August 1888.

STEPHEN JACOB,
Accountant General.

ANNUAL FORM No. 62.

FOREST DEPARTMENT, SIND CIRCLE.

Financial results of the year 1887-88.

Division.	Timber and other produce removed from the Forests by Government Agency.		Other revenue.		Formation protection and Improvement of Forests.	Total.	
	Receipts.	Charges.	Receipts.	Charges.	Charges.	Receipts.	Charges.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Sukkur	1,87,884	1,39,950	63,945	11,955	15,054	2,51,829	1,66,959
Naushahra	93,597	73,251	21,154	6,760	10,144	1,14,751	90,155
Hyderabad	1,26,887	99,915	30,788	10,489	12,926	1,57,675	1,23,330
Jerruck	85,918	65,961	22,128	8,230	11,492	1,08,046	85,683
Total ...	4,94,286	3,79,077	1,38,015	37,434	49,616	6,32,301	4,66,127

Hyderabad,
10th September 1888.

J. G. MACRAE, Colonel,
Conservator of Forests, Sind Circle.

Statement showing the progress of Forest Demarcation and Settlement Work in the Sind Circle for 1887-88.

Class of Forests.	At the commencement of the year. Areas under Section 34 in which private rights have not been enquired into, settled and recorded.	Area settled during the year under		Area of reserved Forests alienated under Section 26.	Area of protected Forests disforested under Government orders.	At the end of the year. Areas under Section 34 in which private rights have not been enquired into, settled and recorded.
		Chapter II of the Act.	Chapter IV of the Act.			
	Square miles.	Square miles.	Square miles.	Square miles.	Square miles.	Square miles.
Reserved Forests	.....	.. ...	.. ...	.....	.....	
Protected Forests	.. ...	.....	.....	.....	.....	

Conservator's Office,
Hyderabad, 10th September 1888.

J. G. MACRAE, Colonel,
Conservator of Forests, Sind Circle.

Forest Administration Reports of the Northern, Southern and Sind Circles, 1887-88.

No. 3310.

REVENUE DEPARTMENT.

Bombay Castle, 4th May 1889.

Letter from the Conservator of Forests, N. C., No. 4064, dated 31st October 1888—Submitting the Forest Administration Report of the Northern Circle for the year 1887-88, with its subsidiary statements.

Letter from the Commissioner, N. D., No. 3931, dated 19th December 1888.
Memorandum from the Commissioner, C. D., No. R./6303, dated 21st December 1888.
} Submitting their remarks on the report of the Northern Circle.

Letter from the Conservator of Forests, S. C., No. 3333, dated 19th October 1888—Submitting the Forest Administration Report of the Southern Circle for 1887-88, together with its subsidiary statements.

Memorandum from the Commissioner, S. D., No. 3711, dated 20th December 1888—Submitting his remarks on the report of the Southern Circle.

Letter from the Conservator of Forests, Sind Circle, No. 757, dated 10th September 1888—Forwarding the Forest Administration Report of the Sind Circle for the year 1887-88, with its subsidiary statements.

Memorandum from the Commissioner in Sind, No. 3555, dated 6th October 1888—Submitting his remarks on the report of the Sind Circle.

RESOLUTION.—The Revenue and Expenditure of the Forest Department in the year under review are contrasted with those of 1886-87 in the following statement:—

	Receipts.		Expenditure.		Net Revenue.	
	1886-87.	1887-88.	1886-87.	1887-88.	1886-87.	1887-88.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Northern Circle	9,13,101	9,68,625	6,87,865	7,23,135	2,25,236	2,45,490
Southern do.	14,33,793	14,34,650	6,94,614	7,46,260	7,39,179	6,88,390
Sind do.	6,85,782	6,32,302	5,17,703	4,66,127	1,68,079	1,66,175
Total ...	30,32,676	30,35,577	19,00,182*	19,35,522	11,32,494†	11,00,055

* The Accounts figure is Rs. 19,49,990.

† The Accounts figure is Rs. 10,82,686.

2. The net revenue of the Sind Circle was only slightly below that of the previous year, and, but for the debit of an exceptional item to the Forest Department, would have been the highest on record. Colonel McRae may be congratulated on so satisfactory a result, obtained in spite of a large falling off in demand for fuel for the Railway and the Indus ferry steamers: but though efforts are being made to establish a revenue independent of this demand, the financial prospects of the Department in Sind cannot yet be considered satisfactory.

As regards the Southern Circle the curtailment of *timber* operations during the year under review in Kolába and Kánara, in the former on account of the market being overstocked, and in the latter in consequence of a diminished demand for Railway sleepers, is noticeable: but, on the other hand, there

was a considerable increase in the *firewood* supplied to the Southern Marátha Railway, especially from the Belgaum forests, and on the whole the receipts of the Circle were slightly in excess of those of the previous year, though increased expenditure on Departmental operations and on the topographical survey caused a marked reduction in net revenue.

In the Northern Circle an increase of net revenue was obtained notwithstanding the fact that the divisions of Násik, Ahmednagar, Sátára and Sholápur were worked at a loss. The result for the first-named of these is observed with some surprise, and though an explanation is furnished the Governor in Council is clearly of opinion that in so large and important a forest charge, the subdivision of which into two independent charges has been contemplated, the receipts may reasonably be expected at least to cover the expenditure. The net revenue in the Surat Division appears to have been reduced to a very low figure by the disproportionately small return for a large expenditure in Departmental removal of produce. There is no explanation of this furnished. It has been found expedient to very largely substitute sales of standing timber in *coupes* formed by the Working Plans branch in both the Thána divisions, and the financial results of the administration of both are generally satisfactory, though a still further improvement may fairly be expected, especially in South Thána, when the systematic exploitation of the more remote and valuable forests has been taken in hand, which, in accordance with the system now pursued by the Working Plans branch, will soon be the case.

3. Among the results of extended forest exploitation in Thána His Excellency the Governor in Council is gratified to find that there are indications on the one hand of the early growth of a local trade capable of supplying certain local wants on terms more convenient to the local population than any which the Forest Department can afford to offer, and on the other hand of a demand for labour in certain forests in excess of the supply. Both these results are of the utmost importance. The latter is calculated to prevent forest conservancy being the cause of any real hardship to those for whom the forests have hitherto been the chief means of livelihood: and if the former, a perhaps still more important result, can be sufficiently extended, it seems probable that many of the difficulties connected with forest administration in this district will gradually disappear without any direct interference on the part of Government. The system of well distributed and numerous small fellings appears to be calling into existence a class of wholesale dealers whose interest must be to dispose, in the immediate locality of the *coupe* they purchase, of a considerable portion of the exploited material, which they are unable to export to a distance with any sufficient profit on the transaction.

4. The changes in forest area are shown in the following table:—

Circle.	Area on 1st April 1887 in square miles.		Added.		Excluded.		Area on 31st March 1888.	
	Reserved.	Protected.	Reserved.	Protected.	Reserved.	Protected.	Reserved.	Protected.
Northern Circle ...	7,231	1,080	183	27	286	41	7,128	1,066
Southern Circle ...	1,822	3,412	...	...	6	...	1,816	3,412
Sind Circle... ...	700	...	205	1	12	...	893	1
Total ...	9,753	4,492	388	28	304	41	9,837	4,479

5. In the Northern Circle the additions to the Reserved Forest area made in consequence of the completion of the settlement of lands previously notified under Section 4 of the Forest Act were chiefly in Khándesh, Sholápur and Ahmedabad, in the latter of which forests were constituted for the first time. The decrease reported in this Circle was for the most part nominal and due to the discovery of the incorrectness of the previously recorded area of the Dángs: but in the Panch Maháls, as in the previous year, it was considered expedient to

convert a considerable area of Reserved into Protected Forest. In the Southern Circle the changes effected were practically confined to Kolába. In Sind the large increase of forest area was due to the notification under Section 19 of the Forest Act on the completion of their settlement under that Act of lands previously selected for forest. A considerable area already selected still remains to be finally notified.

6. In the Ahmednagar and Násik divisions Forest Demarcation, consisting chiefly of the revision of previous schemes, is reported to have been practically completed during the year. Government do not consider it advisable to order a further revision in the latter Collectorate as suggested by the Commissioner, C. D., for some finality must be insisted on. In Khándesh and Thána a fair amount of miscellaneous work was done by the special officers employed, but it is not clear from the present report for the Northern Circle whether much progress towards the completion of actual demarcation was made. In the other divisions of the Circle, except Poona, where, however, Mr. Silcock appears to have been principally engaged in "settlement" duties, no demarcation was effected, but orders were passed by Government during the year on several schemes submitted for sanction.

In the Southern Circle it was found possible to abolish the office of Forest Settlement and Demarcation Officer in the three districts of Kolába, Bijápur and Ratnágiri. The results of the work of the Special Officer in Kánara, to which the Conservator, S. C., refers in paragraph 7 of his report, will be awaited by Government.

In Sind Forest Demarcation is said to have been completed except in one táluka, where it has been postponed till after the introduction of a survey settlement. In this Circle the office of Forest Settlement and Demarcation Officer was abolished soon after the commencement of the year under review.

7. The Governor in Council agrees with the Commissioner, N. D., in thinking that an administration report is not the place for any criticism Mr. Shuttleworth may desire to offer on the report submitted by the Forest Commission during the year and under the consideration of Government, for whose sole information such remarks—if made at all without previous invitation from Government—should have been reserved. It was also unnecessary for him to reiterate the views regarding the protection of Bombay Harbour from any silting up in parts which he has on more than one previous occasion brought to the notice of Government and upon which Government have already, in the case of the settled tálukas of Thána and Kolába, acted to the utmost extent which they deemed compatible with other conflicting interests. Mr. Shuttleworth's attention was drawn to this matter in the Resolution on his annual report for 1886-87; and since then steps have been taken with a view to the preparation of a special map of the catchment area of the Harbour.

8. The progress made during the year in the "settlement" under the Act of the lands which in 1879 were notified under Section 34 thereof is shown in paragraph 47 of the report for the Northern and in Appendix D of that for the Southern Circle. In Sind no such settlement remains to be done. As regards Ahmednagar, and, to a smaller extent Poona, satisfactory progress is reported, but in the Thána, Surat and Panch Maháls divisions of the Northern Circle and in all those of the Southern Circle except Dhárwár (where no such settlement remained to be done) none whatever was made. In view of the facts reported in Appendix D it would appear that the Conservator, S. C., is mistaken in stating, as he does in paragraph 114, that "the settlement of the forests, excepting that of Kánara, is now virtually completed". Such results should not have been reported without explanation. The Commissioner should impress upon the Collectors the necessity for increased attention to the progress of this important duty.

The reported additions to the Reserved Forest area, given in paragraph 4 above, represent with fair accuracy the areas notified under Section 19 of the Act, *i. e.*, areas, previously notified under Section 4, in respect of which formal settlement inquiries have been completed: but there is nothing in these reports to show whether such inquiries represent work done in the year under review or in the previous year.

9. Further inquiries were made during the year under review in the Bhor State with a view to enabling Government to determine what scheme of forest conservancy was feasible in the catchment area of Lake Fife. Mr. Sitárám Dámodar's report on the subject was submitted after the close of the year, and orders thereon have been passed in Resolution No. 2479, dated 29th March 1889.

10. The topographical survey of the forests was in progress during the year in the South Thána and Násik divisions of the Northern Circle and in Kánara in the Southern Circle. Mr. MacGregor is of opinion that this survey is far more detailed in its nature, and consequently far more expensive, than is required: but so important a subject cannot evidently be dealt with adequately by him in an annual report or by Government in their Resolution thereon, and any remarks he may desire to make should be submitted separately. Some of the remarks made by Mr. Shuttleworth apply to the survey as formerly conducted by the officers of the Survey of India; others have already been fully placed before Government and orders have been passed in Resolution No. 11, dated 3rd January 1889, directing the adoption as a general rule of the scale of four inches to a mile in the Northern Circle except in Thána and certain valuable teak forests on or near the ghâts, where a survey on the scale of eight inches to a mile has been specially permitted. In Sind a departmental survey of the forests was continued, with results which, considering the limited nature of its operations, appear to be satisfactory.

11. In Thána the Working Plans branch, increased in strength in the latter part of the year, was fully employed in demarcating the boundaries of the already settled forests and marking out single *coupes* in numerous blocks with a view to bringing the whole of the forests under systematic working as soon as possible. In the Southern Circle the work coming under the description "Working Plans" consisted of estimating the annual yield of definite areas, chiefly in Kánara and Belgaum, with the object in the latter of ascertaining the quantity of firewood available for annual supply to the Railway from the neighbouring forests. In Sind no change of methods was attempted, but it is reported that the experiment in the Laikpur forest, noticed in the last report, was interfered with by the want of demand for fuel for the Railway.

12. As regards the general protection of the forests the results reported are not of sufficient importance to call for detailed notice. In connexion with fire conservancy it is observed that the apparently marked improvement in the Sind Circle is attributed by the Conservator rather to the absence of natural conditions favourable to fires and of inducements to intentionally fire the forests than to greater vigilance displayed by Forest officers. In both the Northern and Southern Circles also fires appear to have been somewhat less prevalent than in the previous year, but as regards the latter Mr. MacGregor assigns the general untrustworthiness of the returns as the reason for his failure to give details of the area protected against fires except in cases in which special precautions were taken by fire-tracing and guarding. It is evident that in tracts in which fires are frequent in the hot weather very trustworthy information as regards the exact areas protected and burnt respectively cannot be expected, but it would seem that such tracts are clearly those in which fire-tracing is most necessary. In the Northern Circle considerable attention has been paid to the subject of fire conservancy, but though a system of fire-tracing is adopted in many forests the Conservator is evidently of opinion that no advantage would result from any great extension of this system. Messrs. Shuttleworth and MacGregor agree in thinking it expedient to make villagers responsible for fires occurring within the limits of their villages. Such orders as are possible have however been passed by Government in Resolution No. 1942, dated 24th March 1888. The effects of fire protection in the Sátpudás mentioned in paragraph 121 of Mr. Shuttleworth's report are of undoubted importance and have already engaged the attention of local officers.

13. The Governor in Council has read with interest Mr. Shuttleworth's remarks on "grazing" in the forests, and especially the grazing of sheep and goats. The questions raised require to be dealt with after consideration of the special characteristics of widely differing tracts, but the Governor in Council hopes

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to be able to remedy some of the defects in practical working which have been brought to notice in special reports upon this subject now under consideration. In connexion with this subject it is satisfactory to find that some progress in constructing living fences to the forests was made during the year in Ahmednagar, Sátára and Sholápur.

14. The report which the Commissioner, S. D., promises to submit regarding Mr. MacGregor's remarks on the free grant system has been received and is under the consideration of Government.

15. As regards communications considerable progress was made in the Northern Circle in the construction of the important Shirghát-Paruli forest road: and in the Southern Circle the survey of a railway from Nagargali to Potoli intended to tap important teak forests in its neighbourhood was undertaken.

16. The Conservators, and notably Mr. Shuttleworth, should be thanked for their full, valuable and interesting reports and for the zeal, ability and industry with which they discharged the important and responsible duties devolving on them during the year under report. The Governor in Council notices with pleasure the commendation bestowed on the officers serving under them by the Conservators, including the Rangers mentioned by the Conservators, N. C. and Sind Circle.

J. DEC. ATKINS,
Acting Under Secretary to Government.

To

The Commissioner, N. D.,
The Commissioner, C. D.,
The Commissioner, S. D.,
The Commissioner in Sind,
All Collectors including the Collectors and Deputy Commissioners in Sind,
The Conservator of Forests, N. C.,
The Conservator of Forests, S. C.,
The Conservator of Forests, Sind Circle,
The Director of Land Records and Agriculture,
The Accountant General,
The Editors' Tables.
} With copies of the Report.

The Government of India,
The Secretary of State for India.
} By letter.